SEWARD'S

LAND OF GOLD

L. H. FRENCH

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NOME BOUND AND ICE BOUND.

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Bradley Wells

SEWARD'S

LAND OF GOLD

FIVE SEASONS EXPERIENCE
WITH THE GOLD SEEKERS
IN NORTHWESTERN ALASKA

BY

L. H. FRENCH, M. D.

LATE MAJOR 3RD U. S. V. CAVALRY

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By J. C. F. Johnson, F. G. S.

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GOLD, GOLD, GOLD, GOLD,
BRIGHT AND YELLOW, HARD AND COLD;
MOLTEN, GRAVEN, HAMMERED, ROLLED,
HEAVY TO GET AND LIGHT TO HOLD;
STOLEN, BORROWED, SQUANDERED, DOLED.

—THOMAS HOOD.

CONTENTS.

PAGE

FOREWORD, BY REX E. BEACH i

PREFACE iii

GOLD vii

CHAPTER I.

Departure from New York—Scenes at Seattle—Voyage to the frozen North—Riotous shipmates—First sight of the new Eldorado—Conditions at Cape Nome 1

CHAPTER II.

The beach at Cape Nome—General appearance of a county fair—Beach not worth fighting for—"Poor Man's Diggings" too poor to satisfy any but very poor men—We abandon the beach and try the creeks 8

CHAPTER III.

Nome City—Prices—Conditions of people—Loss from storms—Claim jumping—A trespassing corpse—Plenty of work for everyone—The sick and destitute 14

CHAPTER IV.

The creeks—Rich pay-dirt—Chances for a fortune lost—Wild tales of gold 19

CHAPTER V.

The natives—Probable origin—Mode of life—Travels—Voyage in an Eskimo boat—Clothing—Food—Ideas of money values—Characteristics and habits—Tribal life—Women—Degeneration. 24

CHAPTER VI.

The danger from storms—Sudden fury of Behring Sea—Great and frequent loss of life and property by wave action—Storm of September 12, 1900 42

CONTENTS.

PAGE

CHAPTER VII.

Nomes advent as a permanent mining field—Description of the development and discoveries of the past four years by *John D. Leedy*..... 46

CHAPTER VIII.

Routes to the gold fields—Safety of all-water route—Transportation on the fields—Lack of harbor accommodations—Snow and ice—Winter weather—Climate—Tempestuous return voyages..... 57

CHAPTER IX.

President Roosevelt's views on Alaska..... 62

CHAPTER X.

Origin of the gold deposits in Northwest Alaska—Character of the country—The Tundra—Creek country—Nuggets—Pockets—Rich placers—Some strange gulches—Placer work..... 67

CHAPTER XI.

Flora and Fauna—No timber—Driftwood—Tundra moss—Wild fruits—Trout and salmon—Seal—Walrus—Ptarmigan—Reindeer—Native dogs..... 75

CHAPTER XII.

In Conclusion..... 88

APPENDIX.

Usual methods of mining in Alaska..... 93

American Placer Mining Laws in brief..... 96

FOREWORD.

By Rex E. Beach.

I am glad to write a foreword for these interesting and accurate notes on conditions as they exist on the Seward Peninsula, and it is my privilege to speak of their author, as I grew to know him in the far North.

Major French is, first and always, a man of rare executive ability, wide practical knowledge, and brimming over with that scarce and valuable quality known on the frontier as "hustle." His familiarity with the mining problems of Northwestern Alaska is complete and gained at first hand. It is not alone theoretical, for he follows operations personally in boot and flannel. It would be difficult to find one more versed in the actualities of that region or who could know better of what he writes, or write better of what he knows. The Major's early training in ranch life had, doubtless, much to do with the development of his powers of endurance and with his skill in horsemanship, marksmanship and athletics. It is unusual to find such typically Western qualities combined with the studious habits for which he is equally well known. During his sojourn at Nome, the better to understand the somewhat complicated laws, and to assist—as he has done—in urging the adoption of new and better ones, Major French has made a thorough study of mining law and has been admitted to the bar.

After having spent years in the study of medicine,

both in America and abroad, he had scarcely commenced the practice of his profession in the National Capital, when the Spanish-American war broke out. Notwithstanding his fondness for surgery, he chose rather to command men on the firing line than hospital stewards, and accepted a commission as major in the 3rd U. S. V. Cavalry. At the close of the war he surrendered this commission to engage in mining in Alaska.

It was my good fortune to meet him there, on the edge of things, where men deal in big ventures and are stripped of the trappings of civilization; and it was my further fortune to watch him help in the upbuilding of a great realm. His book is too modest and omits many highly interesting anecdotes simply because he refuses to use the personal pronoun to the extent that would be necessary. The part he has played in the development of the Seward Peninsula, however, has not been a modest one, but through it all he has been the same aggressive, energetic worker, strenuous and keen, yet self-contained, reliable and capable.

PREFACE.

This book has been written and published, principally, for distribution among those who are interested in the Cape Nome district and among my friends. If it contains any information valuable to those who intend to visit these new and wonderful placers, I shall be very glad. There is no country which offers such splendid opportunities to an energetic man as Alaska; though the reader should remember, should he undertake such a journey, that there are many hardships to endure, and that the making of a fortune is by no means assured.

Gold was first discovered at Nome in July, 1898. The discovery was made by men who were returning from a voyage up the coast, and whose schooner was capsized in a storm off the mouth of Snake River. After doing a little prospecting they hastened to Golovin Bay where they induced others to return with them to Cape Nome. A considerable number of men did so and made valuable discoveries on the creeks, the presence of gold in the beach not being then known. By this time, as winter was setting in, they went back to Golovin Bay. Of course, after they arrived there, the news being too good to keep, every one heard of their luck. In a few hours there was a general stampede from Golovin Bay to the

new diggings. Word was sent to Council City, and on the 18th of November the exodus from that place began. Shortly afterwards the news reached St. Michael, where men from Nome had gold dust to back up their statements, and spent it freely in stores and with trading companies, for mining tools and provisions to take back with them.

This caused great excitement among the employes of the stores of St. Michael. In five days many had secured dog teams and provisions, and were on their way over the ice to the new land of gold.

In three weeks the place was nearly deserted, the same being the case with other small camps nearby. The news spread to the villages along the Yukon. Soon scores of dog teams, laden with provisions, passed through St. Michael, en route for this icy Eldorado.

Most of the men had powers of attorney to stake claims for their friends—some even had powers of attorney for their wives and children in the States. In this way claims in the Nome district were taken up. In a short time, when navigation opened, newcomers could find little ground that was not staked. During the summer of 1899 about five thousand people gathered near Cape Nome, and all unclaimed ground was then taken up. Gold was found in abundance. The transportation companies were largely instrumental in advertising the supposed richness of the beach. During the summer of 1900 gold remained in the beach at Cape Nome in small quantities, but the best of it had been taken out in 1899.

The great richness of the country, which can

hardly be overestimated, lies not in the beach but in the interior. Valuable quartz claims have been located, and future seasons will see many of them in operation.

The climate of Nome is, for the most part, far from agreeable. The weather during early spring and parts of the summer is frequently ideal, the mean temperature being 52° F., though the nights are very cold. In August continuous rains set in, accompanied by high winds. Only those who are physically strong should venture into this country, as the hardships to be endured are of the severest kind.

In June, 1899, gold was discovered in the sands of Nome beach. So many different stories have been told as to the manner in which gold was discovered in the sands on the shores of Behring Sea, that it is difficult to find two men who agree exactly as to the facts of the discovery. The accepted version is that one of the early gold seekers, being stricken with scurvy and unable to work, spent a number of hours each day on the beach, in order to avail himself of the old time whaleman's cure of sand and salt water. In order to occupy his time he took a miner's pan with him and, in a short time, established the fact that gold in large paying quantities could be found in the sands. This, undoubtedly, caused the first real operations in that line by white men; although it is more than probable that the natives had taken gold from the sands long before this, as the early traders found rudely fashioned gold ornaments among them. As no trace of their mining in the interior has ever been discovered, we must draw the aforementioned conclusion.

Quite a number of idle men made rockers and started to work; and even some of the business men sold out and went to rocking. As soon as the miners working on the creeks for wages knew that many of these men were making from $15 to $100 a day, they threw down their picks and shovels and made for the shore. In an incredibly short time the beach was literally covered with men and rockers, materially interfering with work on the creeks.

The beach diggings are about two hundred feet in width. They lie between the ocean and the tundra, which is elevated from ten to thirty feet above sea level, stretching back four to six miles to the foothills. It is composed of frozen moss and muck; its surface being dotted with small lakes.

Beach gold is very fine and hard to save; some of it actually floating, with sand, out of a gold pan. It is found on a false bed rock of blue clay. There are from one to three pay streaks of ruby (garnet) sand, each one varying from one to four inches in thickness, with a bed rock two to six feet deep.

Of the beach, however, I shall have little to say. Its richness was ephemeral, although the vast wealth of the interior exceeds the most sanguine expectations ever entertained concerning the sands along the shore.

L. H. French,

New Rochelle, New York.

GOLD.

GOLD is a name to charm by. It is desired by all nations, and is the one metal the supply of which never exceeds the demand. It has been said, "Gold is the most potent substance on the surface of our planet."

It has been repeatedly asserted that the deposits in the sands of the beaches of Behring Sea, in the vicinity of Cape Nome, are unique, when in reality mining operations similar to those carried on at Nome have been practiced since the world began. It is astonishing how little the average man of business knows of gold.

That this much appreciated metal is "heavy to get" is proved by the high value which has been placed on it from times remote, and that it is "light to hold" most of us know to our cost.

We read no farther than the second chapter in the Bible when we find mention of gold. There Moses speaks of "the land of Havilah, where there is gold;" and in Genesis, Chapter XXIV, we read that Abraham's servants gave Rebekah an earring of half a shekel weight, say 4 dwt. 13 grs., and two "bracelets of ten shekels weight," or about 4½ozs. Throughout the Scriptures, and indeed in all historic writings, we find frequent mention of the king of metals, and always it is spoken of as a commodity highly prized.

Either we are mistaken in the weights used by the Hebrew nation in early days, or the arithmetic of that

time was most emphatically archaic. We read, I. Kings X. and XLI., that Solomon in one year received no less than six hundred and three score and six talents of gold. If a talent of gold was, as has been assumed, 3,000 shekels of 219 grains, the value of the golden treasure accumulated in this one year by the Hebrew king would have been £3,646,350 sterling. Considering that the only means of "getting gold" in those days was a most primitive mode of washing it from river sands, or a still more difficult and laborious process of breaking the quartz from the lode without proper tools or explosives, and then slowly grinding it by hand labor between two stones, the amount mentioned is truly enormous.

Of this treasure the Queen of Sheba, who came to visit the Hebrew monarch, contributed a hundred and twenty talents, or, say, $3,000,000 worth. Where the land of Ophir, whence this golden lady came, was really situated has evoked much controversy, but there is now a general opinion that Ophir was on the east coast of Africa, somewhere near Delagoa Bay, in the neighborhood of the Limpopo and Sabia Rivers. It should be mentioned that the name of the "black but comely" queen was Sabia, which may or may not be a coincidence, but it is certainly true that the rivers of this district have produced gold from prehistoric times till now.

The discovery of remarkable ruins in Mashonaland, which evince a high state of civilization in the builders may throw some light on this interesting subject.

The principal value of gold is as a medium of exchange, and its high appreciation is due, first, to the

fact that it is in almost universal request; and, secondly, to its comparative scarcity; yet, oddly enough, with the exception of that humble but serviceable metal, iron, gold is the most widely distributed metal known. Few, if any, countries do not possess it, and in most parts of the world, civilized and uncivilized, it is mined for and brought to market. The torrid, temperate and frigid zones are almost equally auriferous. Siberia, mid-Asia, most parts of Europe, down to equatorial and Southern Africa in the Old World, and North, Central and Southern America, with Australasia, in what may be termed the New World, are all producers of gold in paying quantities.

In the earlier ages, the principal source of the precious metal was probably Africa, which has always been prolific in gold. To this day there are to be seen, in the southern provinces of Egypt, excavations and the remains of old mine buildings and appliances left by the ancient gold-miners, who were mostly state prisoners. Some of these mines were worked by the Pharaohs of, and before, the time of Moses; and in these dreadful places thousands of Israelites were driven to death by the taskmaster's whip.

The first mode of obtaining this much desired metal was, doubtless, by washing the sand of rivers which flowed through auriferous strata. Some of these, such as the Lydian Stream, Pactolus, were supposed to renew their golden stores miraculously each year. What really happened was that the winter floods detached portions of auriferous drift from the banks, which being disintegrated by the rush and flow of the

water, would naturally deposit in the still reaches and eddies any gold that might be contained therein.

The mode of washing was exactly that carried on by the natives in some districts of Africa to-day. A wooden bowl was partly filled with auriferous sand and mud, and standing knee deep in the stream, the operator added a little water, and caused the contents of the bowl to take a circular motion, somewhat as the modern digger does with his iron pan, with this difference, that his ancient prototype allowed the water and lighter particles to escape over the rim as he swirled the stuff round and round. I presume, in finishing the operation, he collected the golden grains by gently lapping the water over the reduced material, much as we do now.

Gold differs in its mode of occurrence from other metals in many respects; but there is no doubt that it was once held in acqueous solution and deposited in its metallic form by electro-chemical action. It is true we do not find oxides, carbonates, or bromides of gold in nature, nor can we feel quite sure that gold now exists naturally as sulphide, chloride, or silicate, though the presumption is strongly that it does. If so, the deposition of gold may be ceaselessly progressing.

It is well known that much disappointment and loss accrue through lack of knowledge by prospectors, who, with all their enterprise and energy, are often very ignorant, not only of the probable locality, mode of occurrence and widely differing appearance of the various minerals, but also, of the best means of locating and testing the ores when found.

Those of us who have had much to do with mining know that the majority of the best mineral finds have been made by the purest accident; often by men who had no mining knowledge whatever; and that many valuable discoveries have been delayed, or, when made, abandoned as not paying, from the same cause—ignorance of the rudiments of mineralogy and mining.

What the prospector requires to know is, first, the usual locality of occurrence of the more valuable minerals; secondly, their appearance; thirdly, a simple mode of testing. With respect to occurrence, the older sandy and clay slates, chorite slates, micaceous, and hornblendic schists, particularly at or near their junction with the intrusive granite and diorite, generally form the most likely geological country for the finding of mineral lodes, particularly gold, silver and tin. But those who have been long engaged in practical mining, finding by experience that no two mineral fields are exactly alike in all their characteristics, have come to the conclusion that it is unwise to form theories as to why metals should or should not be found in certain enclosing rocks or matrices.

Old river beds, formed of gravelly drifts in the same neighborhood, may probably contain alluvial gold; or shallow deposits of "wash" on hillsides and in valleys, will often carry good surface gold. This is sometimes due to the denudation, or wearing away, of the hills containing quartz veins, which, popular opinion to the contrary, is not always the case.

Much disappointment and loss of time and money may be prevented if prospectors will realize

that *all* alluvial gold does not come from the quartz veins or reefs; and that following up an alluvial lead, no matter how rich, will not inevitably develop a paying gold lode. Sometimes gold, evidently of reef origin, is found in the alluvial; but in that case it is generally fine as regards the size of the particles, more or less sharp-edged, or crystalline in form if recently shed; while such gold is often of poorer quality than the true alluvial which occurs in mammillary nuggets, it is of a far higher degree of purity as gold.

The ordinary non-scientist digger will do well to give credence to this view of the case, and will often thereby save himself much useless trouble. Sometimes also the alluvial gold, coarser in size than true reef-born alluvial, is derived almost *in situ* from small quartz "leaders," or veins, which the grinding down of the surface of the slates has exposed; these leaders also in time being broken and worn, set free the gold they have contained; this does not, as a rule, travel far; but sometimes becomes water-worn by the rubbing over it of the disintegrated fragments of the rock.

But the heavy, true alluvial gold, in great pure masses, mammillary or botryoidal (like a bunch of grapes) in shape, have assuredly been formed by accretion of some metallic base—from gold salts in solution, probably choride, but possibly sulphide.

Prospecting for alluvial gold at shallow depths is a comparatively easy process, requiring no great amount of technical knowledge. Usually the first gold is got at or near the surface, and then traced to deep leads, if such exist.

~1000. LBS. GOLD BULLION AT ALASKA

ACTUAL ALASKA

FROM A GOLD SEEKER'S POINT OF VIEW

STEAMER BOUND FOR NOME, WORKING ITS WAY SLOWLY
THROUGH THE ICE.

CHAPTER I.

NEW YORK TO NOME.

DURING the winter of 1899-1900 the marvellous stories of the richness of the newly discovered Cape Nome district induced me to make preparations for spending the summer there. A considerable plant was ordered in New York and shipped to Seattle. The machinery, which proved to be the largest of the sort taken to work on the beach at Cape Nome, was designed to take up sand from the bed of the ocean. The principal features of the plant were, one 10-inch centrifugal pump, one steam shovel and dredge and one high-duty placer-mining pump, together with the necessary gold saving attachments. We fully believed that the sand below low water mark would contain a large and highly remunerative amount of gold.

Accompanied by W. J. Scanlan and others I reached Seattle during the last days of May, 1900, to find the town full of men preparing to go to Cape Nome. Steamers left almost daily, laden far beyond their capacity both as to passengers and freight. For many weeks vessels had been departing with the full knowledge that Behring Sea would be full of ice floes and that there must be long delays in reaching Nome. But so great was the eagerness to be the first on the field, that a great number of people left in the early spring on sailing vessels and steamers. Tent makers, grocers, hardware dealers,

and general outfitters benefitted principally among the merchants of Seattle, though, perhaps, hotel keepers and transportation companies should be mentioned first.

To those who contemplate going to any part of Alaska I wish to state, most emphatically, that there is no better place to purchase an outfit, or machinery, or supplies, or clothing, than Seattle. The merchants of Seattle are not only exceedingly moderate as to charges, but are surprisingly accomodating and prompt. I was the recipient of many kindnesses, and I find that my experience is not different from that of others.

Very elaborate statements concerning the new Eldorado had been gotten out by the steamship companies. Some of them were fairly correct, but many were so glaringly inaccurate that one who has spent a season in that country can be only amused at their perusal.

Although a surgeon myself, I had no time to devote to the care of the health of our party, and we therefore took with us Dr. O. W. McMichael. During the season we employed nearly two hundred men, and it proved to be a most excellent plan to have our own surgeon. Many cases of sickness occurring, he had constant recourse to our hospital outfit and supplies of medicines.

I was advised to take drafts, instead of cash. I had, however, a premonition that I might have some difficulty in securing cash at Cape Nome, and so took greenbacks for a large amount, the various members of the expedition carrying them in money belts. This was a most fortunate thing for us, as not only should I have failed in securing, for some time, any money on

drafts at Cape Nome, but I even failed to find a place to deposit our money. For some weeks we had to continue to carry this decidedly bulky and disagreeable load. Substantial banks have been established since that date.

On June 7th our party sailed from Seattle on the S. S.——, the best steamer of the Cape Nome fleet. We took with us over two hundred tons of machinery, which we believed to be adapted to the conditions prevailing at Cape Nome, together with a large amount of coal, lumber, supplies, tents, hardware, etc., etc. The vessel had on board one thousand and nine souls, far more than she was licensed to carry. But, while there were many complaints, there was really no actual suffering from overcrowding, nor was there any lack of anything essential to the comfort of the passengers, although, had we not made so speedy a voyage, our condition might have been pitiable owing to the lack of provisions. As an evidence of the parsimonious policy of the steamship company (which was really one of the best) I have simply to say that we made the trip in ten days, certainly quite as short a time as could have been anticipated; yet on the morning after our arrival, and before the passengers landed, it was necessary to send to other vessels of the fleet, lying in the offing, for food for breakfast. While we were delayed less than two days in the ice, it would not have been unusual at that season of the year to remain in the ice a week or more. Had this happened, it is easy to see what suffering to the passengers would have been entailed.

This wholly indefensible conduct on the part of the transportation company is one of the least glaring of the

many impositions inflicted on those who have gone to Cape Nome, as well as on those who have gone up the Yukon. There seems to be no redress for actual suffering entailed by their carelessness. I know of instances where death has resulted, yet Seattle newspapers have declined to publish the facts, and long delays of the law have worn out those who sought redress in that manner.

The personnel of the passengers on board the S. S.——— was about the same as that of the community at Nome. About one-third was of the "sporting" class, male and female. One-third was of the idle, always foot-loose class, who never do well anywhere under any circumstances, and who had no definite plan of any sort. The last third was divided between men who had experience in mining and definite plans for operations and work at Nome, those who were going into mercantile business, and professional men. The presence of gamblers and "sporting" people in a mining camp is one of the best indications of its prosperity, and I am not prepared to say that they do such a community great harm.

A few days after leaving Seattle, when the passengers commenced to get over their sea-sickness, disorder became rife on board the ship. There were, besides the officers, but four white quartermasters, and, as these were constantly plied with liquor by some of the passengers, they were of little service. The balance of the crew were Chinamen, the vessel having been previously in the tea trade. In one fight, which took place on deck, our captain had his eyes blacked; for a time, it looked as though the rough element was going to take

BIRDS-EYE VIEW OF UNALASKA AND DUTCH HARBOR.

Photograph taken from neighboring mountain top

possession of the ship. With the captain's consent and approval, a Vigilance Committee was formed, of which I had the honor to be chairman, and by that committee the ship was patrolled day and night until we reached Cape Nome. The captain's orders were enforced, so far as the management of the unruly element on ship-board was concerned, by that committee.

Our voyage to Nome was otherwise pleasant and uneventful. On fine days the decks presented a curious spectacle. Although the crowd was too great to permit of promenading, people would form in groups for divers recreations. Rival religious meetings were often held, crap games, cards, two or three roulette wheels, rough flirtations and rougher badinage.

On the sixth day ice was sighted and we veered off to the west, towards the Siberian Coast, to avoid it. Icebergs never come through Behring Straits, though immense ice floes filled the horizon to the east and north. Great fragments, detached from the edge of the pack, looked exceedingly picturesque. Upon one cake of ice, floating past us, crouched a miserable white fox going to certain death by slow starvation. Whales became a common sight and gulls followed the ship in clouds. Innumerable seal and a few walrus were seen daily.

On the afternoon of June 13th, we sighted the Aleutian Islands. Our way led us through Unimak Pass, which is the route usually followed by ships, unless it is desirable to put into Dutch Harbor for coal. In that case Akutan Pass is the gateway, causing a slight detour from the direct line.

Unimak Pass is some two miles in width, and constitutes a noble entrance to the waters beyond. Forbidding and tremendous masses of rock loom on either side. Absolutely without vegetation or sign of life, it is, in truth:

> "A lonely land, where no man comes,
> Nor has come since the making of the world."

The great snow-clad mountain Shilshaldin reared its fiery head nine thousand feet above us. Through the glistening blue ether rose smoke and steam from the seething lake it cradles in its summit.

Once through Unimak Pass we were in Behring Sea. The air grew colder. The next morning the Pribyloff Group came in view. We sighted Otter, St. Paul's and St. George's Islands. Thousands of seal were plainly seen; one, very beautiful, swam beside us half the day. Air and sea were alive with wild fowl.

All that night we lay in a thick fog. On the morning of the fifteenth a peculiar condition existed. The sun shone brightly about our ship, while beyond, the fog seemed impenetrable. As the day advanced it lifted and we went on at full speed.

During the last days of our voyage taking photographs at mid-night was a favorite amusement. Capital results were obtained from a short exposure, even showing vessels some distance from the ship.

A dreary waste of moss-covered frozen ground, dotted here and there with tiny lakes and intersected with creeks and rivers—rows of black hills stretching away into towering cloud-capped mountains, is the landscape

to first greet the eye on approaching land anywhere along the Behring coast.

We arrived off Cape Nome June 17th, finding about thirty vessels there before us. Although the earliest arrivals had preceded us by not more than a week or ten days, some of them had been at sea for nearly two months. The following day most of the passengers landed.

CHAPTER II.

THE BEACH AT CAPE NOME.

WHEN I landed at Nome City I found over fifteen thousand people. These, I supposed, comprised most of the people who had come to that section; yet I later found that from five to ten thousand more were scattered along the beach for twenty-five miles.

The scene on the beach was absolutely chaotic. Thousands of tons of freight of every conceivable description were piled high from the water's edge far up the beach and for two miles along the water front. Everything was in an appalling state of confusion. Machinery, all sorts of supplies, hay, grain, lumber, hardware, provisions, liquor, tents, stoves, pianos, sewing machines, mirrors, bar fixtures—everything that one may imagine was there. The delivery of goods to their rightful owners was next to impossible. In many instances steamship companies claimed that their responsibility for goods ceased when the goods went over the ship's side. As this performance took place about a mile out to sea, a very risky and expensive trip on lighters had still to be made before the landing, through the surf, was accomplished. It will thus be seen that this was hardly a pleasant prospect for shippers of freight.

Goods once on the beach were still far from their destination, even though the actual distance to be covered was not great. Transportation along the beach was

A BLOCKADE ON FRONT STREET, NOME.

either by wagon, at $10 an hour—and a wagon could only haul a few hundred pounds and move at a snail's pace—or goods could be moved on lighters, which were towed by steam or gasoline launches. The charges made by these launches for such towing were frequently as high as $500 a day. Prices fell later in the season. Hauling anything on the tundra was next to impossible. Dog teams abounded. Six to twelve dogs, harnessed tandem fashion, could pull a small wagon carrying not to exceed two hundred pounds.

The main street was the only passable street and this was a surging mass of humanity. Men rushed furiously about, apparently without any particular object. At that date there were one or two frame lodging houses ready for business, but no hotels. A bunk cost $2 or $3 per night, according to the character of the place. Very few who had landed had possession of their tents. Thousands slept out doors on boxes or bales or walked about all night. It was a difficult matter to tell when it was night and when it was day, as there was absolutely no difference in the amount of light. Restaurants were principally in tents; the cost of a modest meal was from $2 to $3; three boiled eggs could be had for $1; ham and eggs for $1.50; bread and butter and coffee, 50 cents. The weather at that date was ideal, so that little hardship was entailed by sleeping out doors.

Sanitary arrangements were absolutely nil. The irregular city government did improve matters somewhat by ordering, on penalty of a fine, that all persons, male and female, use public latrines erected for the pur-

pose. Tickets to these places were sold at 10 cents each, or three for 25 cents.

Realizing that to land our freight on the beach, under the conditions prevailing, would entail a delay of weeks in getting out to our beach claims, six miles away, as well as the loss of thousands of dollars for moving, I arranged with the captain of our steamer to move the vessel up to a point opposite our claims, and land our property there.

This I was enabled to do a little later, without any cost, in view of what he was pleased to call my services to his company. Bad weather and difficulty in landing necessitated our remaining opposite our claims for more than a week. It was not until the first days of July that we found ourselves landed on our claims and in possession of all our freight.

During all of July the beach was a scene of the utmost activity; plants of every description were in process of erection or in operation. The rule as to each man taking a twenty-five foot strip, which I had believed to prevail, was wholly disregarded; a man used whatever ground his plant occupied. Towards the last of July an attempt was made to hold full-sized claims on the beach and in some instances soldiers were sent to remove intruders. This action would probably have been strongly contested, and I do not believe that it would have proved legal, for the beach had been frequently characterized as the "poor man's diggings." But most of the people by this time had come to the conclusion that the beach was not worth fighting for; there was, therefore, no concerted opposition to the

attempt to clear a few claims of trespassers. It is estimated that seven or eight thousand men worked the beach with rockers, and that as many more either owned or were employed by large or small plants. Many of the rockers were painted with bright colors; as one rowed up and down near the shore, they resembled nothing so much as the butter and cheese machines at a county fair.

The most popular machines were small centrifugal pumps, operated by gasoline engines, throwing enough water to furnish one sluice head. Of these there were endless numbers whose explosive puffs could be heard above the roar of the surf night and day. Many were the devices calculated to work beneath the sea. Of these our plant was the largest, though we had numerous smaller plants.

Our camp was, I believe, the model camp on the beach. Our tents were of the best quality, all large, and were put up, not on poles but on frames erected for the purpose. The sides were boarded up and flooring put in. Stoves were in all the tents, and one extra large tent was entirely devoted to the drying of men's clothing.

I believe that much of the sickness on the beach was due to the fact that not all the tents had floors, and thus men were unable to keep themselves warm and dry. We had everything to eat which can be put up in cans; most of the time we had dessicated potatoes, onions and other vegetables. Large amounts of beef and mutton were sent up in cold storage, and not a little beef on the hoof. The "Skookum," whose dimen-

sions were really colossal, brought up a great many cattle.

Although it became warm toward noon in July, we had no difficulty in keeping all perishable articles of diet in an excellent state of preservation. By digging down a few feet one could always strike ice, on which butter and such things could be put, the whole covered over with boards and a piece of canvas. Such made ideal ice chests.

We had made elaborate preparations to fight mosquitoes, having bolts of mosquito netting and various sorts of mosquito-proof head-gear. But we had no use for any of this while we were on the beach, though it would have been useful had we gone to the creeks during the warmest weather. I never saw any mosquitoes on the beach.

In August the scene changed. The beach was dismal beyond description. The rains had set in; much of the machinery was abandoned, covered with rust and sinking in the sand; the exhilaration of hope, which had fired the miners a month earlier, when they were getting ready their plants with money they had brought up with them, had vanished. Most of those who still worked were trying to get a stake on which to leave the country.

We were ready for operations on the 17th of July. For nearly a month we literally swept the bottom of the ocean in front our claims. The machinery was admirably designed, doing all and more than had been claimed for it. We handled thousands of tons of sand, in all of which there were particles of gold, but never in paying quantities.

MACHINE DESIGNED TO ELEVATE AND SLUICE BEACH SANDS ON LARGE SCALE.

REAR VIEW OF SAME MACHINE.

A majority of the plants had given up long before we reluctantly acknowledged that our enterprise, so far as concerned that field of operation, was a failure. The fact was that the richest of the deposits of gold on the beach had been taken out during the preceding season, and that gold, in paying quantities, never existed below the water line. I am inclined to believe that those who had taken it out fully expected that infinitely richer deposits might still be found, but it was not so. Nine-tenths of the men who worked plants on the beach made dismal failures, some of the remainder made expenses, and a few happened to find rich spots, making some money. Men with rockers made fair wages, $5 to $25 a day early in the season, and a bare living later. The man with the rocker was able to move about looking for good spots, was under little expense and many of those who were industrious did well.

While it is not to be denied that gold exists along the whole vast coast from Cape Nome to Cape York, it is a positive fact that it does not exist in sufficient quantities to yield large returns for extensive operations; up to September 1st our operations were as dismal a failure as it is easy to imagine.

Forced to acknowledge our defeat, we housed our plant and turned our attention to the creeks. At this time there was every temptation to sell our machinery for what it would bring, and return to civilization.

CHAPTER III.

NOME CITY.

AS late as July, 1900, Nome City was nothing but a city of tents. By the first of August over fifty buildings had been erected; many more being in process of construction. Lumber was very scarce, selling for $160 a thousand feet. Carpenters were in great demand and commanded high wages. In a short time Front Street was lined with shops, saloons, dance halls, gambling houses and restaurants of all sizes and shapes, open for business day and night. Late in August the United States military barracks were completed.

When I left in October, 1900, the winter had set in, and few people were still living in tents. The buildings of Nome were, many of them, highly creditable and were sufficient in number to accommodate the ten thousand people who would remain there all winter. Several well built hotels existed, and a large theatre in which a typical western variety show could be seen, as well as weekly prize fights.

Early in the season the main street, called Front Street, was deep in dust, because it really was part of the beach. All streets further away from the water's edge were impassable on account of the mud. After rain set in, in August, even the main street became a "slough of despond." The only thoroughfare having the slightest pretension to paving was Stedman Avenue, otherwise

NOME CITY, EARLY IN JULY, 1900.

NOME CITY, SEPTEMBER 15, 1900.

known as "Hogan's Alley"; this was planked over, and there we had our offices. In later years several streets have been well planked. Prices of commodities were exceedingly high during the winter of 1899 and 1900 at Nome City, but fell materially when vessels came in, after the breaking up of the ice. The great quantities of provisions shipped in at that time caused a distinctly bearish movement in prices. This was only temporary, however. The prices I quote were those which prevailed towards the latter part of August, when many vessels were still due to arrive before winter set in, and which can therefore be taken as average prices.

With the opening of navigation thousands of tons of goods were landed on the beach and thrown on the market. The water front for miles was a scene of barter, and goods were sold for what they would bring. The result was a thorough demoralization of prices, Seattle market rates being quoted in many instances. The legitimate dealer was brought in close competition with the beach dealer, who was at little or no expense. Outfits could be bought very cheaply. Eggs, which earlier in the season sold as low as $7 a case, sold late in August for $15, and were not plentiful. Potatoes sold at 7 cents a pound, or $9 a crate. Bacon was scarce, but sold at 30 cents a pound. Hams were plentiful and sold at the same price. Sugar retailed at 15 cents a pound, while flour could be had for about $9 a barrel, or $2.50 a sack. Coal oil, which the winter before commanded $10 a case, could then be had at $5 a case. The best brands of condensed milk were quoted at $11 a case. The market was well supplied with

butter at 75 cents a pound. Fresh fruits of all kinds were plentiful. Lemons and oranges were quoted at $6 a case, while apples were to be had at $4 per box, the quality not being super-excellent, by any means. Lumber sold for fabulous prices early in the season, but late in August brought $60 per thousand feet. Coal of a good quality then sold for $30 a ton, but, after the great September storm, none sold for less than $60 a ton. During later years prices have fallen so that they now represent an advance of about 10 per cent. over Seattle prices.

Numerous storms visit the coast near Cape Nome. Behring Sea is a shallow body of water easily lashed into fury, and capable of doing great damage to ships and buildings near the water's edge. Whenever storms arise, ships all put to sea immediately; it is not an uncommon thing to see forty or fifty vessels lying in the offing, and an hour later not one in sight. Notwithstanding warnings from old timers, many newcomers built near the water's edge and these suffered loss from storms. The great storm of September 12th, 1900, destroyed more than $1,000,000 worth of property and rendered hundreds of people homeless. All the buildings on the south side of Front Street, in the western portion of Nome City, were swept away and destroyed. By order of the military authorities that side of the street was not rebuilt.

Nome City has been remarkably free from the disorder and lawlessness usually associated with a mining camp. There have been a few murders, some robberies, but, on the whole, hardly more crime than would have

STREET SCENE IN NOME.

existed in any town of similar size in the United States.

The most fatal diseases have been typhoid fever and pneumonia, but there have not been a great many cases of these. In this connection it may not be inapropos to mention the most remarkable instance of theft of which I have ever heard. The Nome City cemetery was on the edge of the tundra, just west of the city limits. As the tundra is solid ice to a not yet discovered depth (I have put a prospect drill sixty feet down, all the way in ice and frozen ground), graves had to be literally hewn out, with much labor. Two men, after digging a grave, had gone to town for the body. Upon their return they discovered that another corpse not only occupied their grave, but that it had been filled in and a head-board erected. Not being willing, naturally, to evict even a trespassing corpse, although their own "claim" had been clearly "jumped," they dug another grave.

Small-pox existed in July, 1900, although few of the cases were fatal. The number of persons affected was greatly exaggerated in stories sent to outside papers.

The term "outside," by the way, is something of a misnomer. It is an importation from the Klondike, where the use of the word, in the same connection as it is used at Nome, is eminently proper. That is an interior country, but the residents of Nome City can scarcely be called such, since they live on the sea coast. However, the name seems to fit, hence it is used. In referring to the outside world, the people of Juneau, Skagway, and Southwestern Alaska, generally use the word "below." Thus the papers in chronicling the

arrival and departure of steamers say, for example, that "such and such a vessel arrived from below." Of the two words, so far as the Behring Sea coast is concerned, "outside" seems to be the most acceptable.

Nome has annually a number of sick and destitute people, who are deported by the military authorities. but among this number there are many too lazy to work, and not worthy of receiving aid. There is plenty of work for those who choose to take it. Any industrious man with a rocker, which he can build himself, can always go to the beach, and, in a week or two at most, rock out enough to pay his fare to the outside.

GOLD RUN, IN THE BLUE STONE DISTRICT.
In general appearance this is a fair sample of the average medium size stream on the Seward Peninsula.

GETTING A SMALL PUMPING PLANT OVER THE TUNDRA TO A FRESH WATER LAKE.

CHAPTER IV.

THE CREEKS.

WITH a singleness of purpose which now seems scarcely commendable, I had devoted my time, during the first half of the season of 1900 to the beach alone, confidently expecting that we were going to make a fortune there. While I was aware that work was being done on the creeks, I paid little attention to it. It would have been infinitely better had I gone to the creeks in the first place; but the principal reports on Cape Nome had been about its beach. Now that I had tested this, I turned to the country lying among the hills.

Here were innumerable creeks and gulches, and ancient water-ways. I found that as great a number of men as had been on the beach were working on creek claims. A very large majority of them were making money.

I acquired claim after claim, sent out numerous prospecting parties and made every effort to snatch victory from defeat before the waters of the creeks and lakes should be locked in icy fetters for the long dark winter. We opened a number of camps and while in many instances work was done to no purpose, we were finally gratified with the knowledge that we had "struck it rich" in several different places.

The work on the creeks was being carried on without machinery; in most instances by sluice boxes, where

water was plenty, and with rockers, where water was scarce. Suffice it to say that, although the season was far advanced, we struck rich "pay-dirt" on a sufficient number of claims to do much toward retrieving the losses of the earlier part of the season and to give us positive assurance for the next.

When, on the first of October, water froze in the sluice boxes, we were taking out such handsome daily profits that it was with great regret we were compelled to abandon our claims to the watchmen, who went into winter quarters.

When I first landed at Cape Nome a former aquaintance had asked me to purchase a claim on Nakila Gulch for $300. I went to see it and thought it so unpromising that I had no hesitation in refusing it at any price. Early in August the same claim was sold for $150,000, after the owner had taken $75,000 out of the ground.

Innumerable instances of the same sort occurred in almost every district in that section of Alaska.

How much money was taken out during that first or any of the following seasons will never be known. Although many millions have passed through banking houses, express companies, transportation companies, and the assay office at Seattle, I firmly believe that an equally large amount is brought out by individuals who choose to take the risk of carrying it themselves rather than pay the high charges otherwise necessary.

The resources of the numerous mining districts of the Seward Peninsula, the Eldorado, Discovery, Norton Bay, Blake, Big Four, Cripple, Sinrock, Fairview,

WORKING A CLAIM IN A PRIMITIVE MANNER BUT WITH GREAT PROFIT.

SHOWING DAM, DRAIN AND A FEW LENGTHS OF CANVAS HOSE ON CLAIM.

SLUICING WITH WATER FROM DAM SHOWN IN TOP PICTURE.

Granite, Bonanza, Cape York, Koyukuk, Bluestone and others, were just commencing to be known. Prospecting was done on a large scale in all of them during that season, and in many of them large amounts of gold dust were taken out. For the most part the work done was only such as to demonstrate the existence of gold and to prepare for the following season's work.

There is probably not one single gold nugget larger than of a dollar's value in all the beach sands from Cape Nome to Cape York, but nuggets are found everywhere that creek and bench claim placer mining is carried on.

Our mode of procedure during our early mining at Nome was to divert the waters of a creek by the erection of a dam. Canvas hose led the water where we required it for sluicing purposes or carried it away in such a manner as to leave the bottom of the creek dry.

It has often been asked how we could protect ourselves from losing valuable nuggets. Every day the auriferous material is thrown into the sluice boxes with long-handled shovels and the gold, of course, falls into the riffles, being caught in these devices along the bottom of the sluice boxes. No one but the superintendent and mining engineer ever thinks of looking into these sluices; a miner who should be seen examining the sluice boxes would be immediately discharged from any claim. While all the gold is of about the same value, the chief difference lies in color and form. Some of the dust and nuggets are nearly black; other specimens are bright as though burnished. Some of the coarser dust and smaller nuggets are of rough and irregular

shape; others are smooth and scale-like; a few contain some quartz.

There are so many different varieties of gold on the Peninsula as to lead an inexperienced observer to suppose that they must have been mined in localities separated by considerable distances; but the old Peninsula miner soon becomes sufficiently expert to locate them and tell the exact district from which specimens come.

During June and July, 1900, probably thirty thousand people landed at Cape Nome. Nearly one-half of that number soon returned to the places whence they came, disheartened, discouraged, and with little but denunciation of Nome on their lips. Many of those still remaining were deeply disappointed because their high expectations had not been realized. I was charitably disposed toward those who were despondent, and I don't even feel like censuring those who have returned home with evil tales on their lips and hatred of all things Alaskan in their hearts. All this was to be expected. A country condemned without just cause can endure adverse criticism. Many people blamed conditions, not themselves, because they failed to achieve the success they anticipated.

There is a lesson in the great rush to Cape Nome of 1900; the lesson is the hard, practical one of every day life, teaching men that, except in rare instances, the accumulation of wealth is not the work of a few months, but years. It is the task of a life time, often several life times, and to that, it need hardly be added, the great majority of people never attain.

That the tales of the great riches of Nome were beautifully exaggerated was not the fault of the country. That these tales brought disappointment, sorrow and loss of money cannot consistently be charged to its debit account. Too much was expected of a country in its chrysalis state.

Developments have demonstrated that the faith of those who knew its possibilities was not misapplied. Yet the development of this section has, even now in 1904, scarcely begun.

CHAPTER V.

THE NATIVES OF THE FAR NORTH.

THE natives of the Seward Peninsula, numbering about eight hundred, are Eskimo, or, as they call themselves, Innuits. They are, in general, scattered along the coast, with several more or less centralized settlements about the missions and reindeer stations, at Port Clarence, Cape Prince of Wales, Golovin Bay and the Cape Nome region. They usually live in small villages of eight or ten families, crowded in crude, underground huts or dugouts, supporting themselves by hunting and fishing. They are a good-natured people and generally industrious. The youths are reported to be apt in the mission schools.

Prior to the recent discoveries of gold, the only whites on the Seward Peninsula with whom they came in contact were the few Americans in charge of the several missions and reindeer stations, and a score or so of Swedes and Laps employed as herders.

Since the advent of the gold-hunter with his attendant dissipations, the mortality among the tribes on the coast of the vast gold-bearing peninsula of Alaska, between Norton Sound and Kotzebue Sound, has increased to such a rapid and alarming extent that the native population is in danger of becoming extinct. The diseases which are carrying them off are consumption and pneumonia; before these their constitution seems to be helpless. Wherever possible, the whites have

ESKIMO BOAT (OUMIAK) AND GROUP OF NATIVES.

been helping them; but when once attacked it has become apparent that only the hand of Providence can snatch the sufferer from the grave. Whole families, even tribes, have died off; there is more than one case where children have been left without parents or a single relative to look after them.

Great stoicism is shown, as a rule, by the native sufferer, but in some instances the deaths are pathetic in the extreme. So strongly superstitious are they that they will not remain in the neighborhood of a corpse if they possess enough strength to drag themselves away. On this account the United States Government has met with much difficulty in caring for the sick. If too weak to crawl, a native lies in a state of absolute terror when he knows a dead body is in the camp.

It seems that death and deterioration follow wherever native Alaskans come in contact with the white race. This is evident not only in the country around Nome, but in Southeastern Alaska and almost every section of that coast. The causes lie not so much in whiskey, dissipation and blood disease, as in changes in their manner of living. The Innuit puts off his native raiment, discards the food to which his constitution and the constitution of his forefathers have been accustomed for generations, and substitutes for his fur clothing and for his diet of seal oil and dried salmon, the manufactured clothing and food of civilization. There is not much room for wonder that colds, consumption and pneumonia follow.

The United States Government, acting through General Randall, established a reservation at the

mouth of Nome River, about four miles from the city of Nome, where as many sick natives as can be found are being "herded" and provided for. The dead-house there had to be abandoned on account of the superstition among the Eskimos. As long as it existed, when the news that a death had occurred got abroad, great commotion and excitement prevailed. There have been a number of instances where patients have fled down the beach, running till they dropped dead or exhausted, to escape from the, to them, dreadful vicinity. A corpse preserved any length of time they believe brings famine, disease and death.

The natives, with their dark skins, dark eyes, high cheek bones, straight hair and small statue, seem to be of Mongolian origin. Expert carvers in bone and ivory, the sale of such curios is a source of considerable revenue, though they take little thought of the morrow. With skin boats, dog teams and reindeer they make long journeys.

Probably the most novel and exciting trip in the world is a voyage along the shores of Behring Sea in a native Alaskan boat drawn by a dog team. The idea of towing a boat will be sure to remind the Eastern reader of a trip through one of our large canals, with the patient, plodding mules dragging the huge boat at a snail's pace along a placid waterway, the banks of which are lined with rich meadows and green pastures, dotted here and there with cozy, picturesque farm houses.

The Alaskan voyage uppermost in my memory stands out so strongly in contrast with the foregoing, that the picture is as vivid as though more recently

NATIVE RECEPTION DAY ON U. S. REVENUE CUTTER "BEAR."

(When the "Bear" drops anchor off an Eskimo village the whole population flocks aboard.)

drawn. To begin with, the vessel in which the trip was taken is of a distinctly unique type and construction, called a oumiak. The framework is made of beautifully finished and finely-fitted bits of driftwood, fastened together with leather throngs so securely as to be perfectly safe, and yet pliable to an astonishing degree. Over this basket-like structure a covering of porpoise hide is stretched and so carefully sewn as to be absolutely water tight. The boat is in shape not unlike the ordinary whale boat, usually about twenty feet long, with graceful lines, and capable, under favorable conditions, of transporting a very heavy cargo.

The natives frequently load to the water's edge, using the dog teams to tow them along the surf line until they reach the mouth of a river or bay, when a halt is made long enough to take the dogs and drivers on board. Paddles are then resorted to until a landing is again made.

With two companions I embarked in one of these frail craft for a journey of twenty miles down the coast. A team of five "husky" dogs was attached to a fifty foot tow line of walrus hide. A native steersman formed our working crew, while the offices of chief engineer and assistant were filled by a native driver, who remained on the beach. When everything was in readiness and we were sitting in the places assigned us, the Eskimo seized the little boat which was rising and falling and sometimes dancing on the waves, as though impatient to be off, and ran it into a line of breakers where the water was about three feet deep. While we were embarking, the dogs sat idly by, watching us from

the beach; but the minute the oumiak reached water deep enough to float her nicely, and swung around parallel with the shore, an exciting change occurred. All was animation. The dogs sprang into their harness and started off down the beach at a rattling pace, encouraged by the driver, who ran behind them cracking his whip and shouting at every leap. The Innuit in the bow of the boat kept the tow line perfectly steady, gradually raising it with his instrument sufficiently to insure its clearing a piece of drift wood or a partly submerged rock, while the man in the stern, by a series of careful, dexterous and skillful strokes, managed to keep the boat just outside of the edge or wash of breakers, and we were off. Surely our voyage resembled the flight of the sea-gull more than a boat trip along the shore. One moment our little craft would be lifted on the crest of a wave, with what seemed to be a certainty of being dashed to pieces on the sands or rocks; at times we flew along, for an instant high above the heads of the dogs, with the tow line clear of the water all the way between the team and boat; the next moment we were down in the trough of the sea, with nothing visible but the cold grey waves and the leather line connecting us with the shore cutting swiftly through the angry waters. Nothing was audible but the ceaseless roar of the surf with occasional shouts, or rather explosions of bad English and unprintable Siwash, from our driver. The ride itself was most exhilarating; but the principal fun consisted in watching the dogs become tangled in the rockers along the beach, and in clearing the tow line over the various obstruc-

INTERIOR OF ESKIMO SUMMER TENT.
(The clocks seen are for ornament only and are neither wound up nor understood.)

REINDEER KILLED BY ESKIMO.
(Skins spread out to dry.)

tions. Miners' hats were swept off and several had their feet knocked from under them. However, everyone laughed and cheered as we dashed along, calling to them not to "obstruct navigation."

We finally arrived safely at our camp; our mode of travel was exhilarating in the highest degree, and we all voted it the most agreeable to be encountered anywhere in the vicinity of the Arctic circle.

The native idea of a circulating medium is so hazy as to defy description. Intercourse with the white traders, from the earliest exploration down to the present time, has merely taught them that the skins of the animals they trap for food can be exchanged for certain commodities which white men have been in the habit of bringing into their country. As the trader has always named the value of the article, it will be seen that their knowledge of the purchase, compared to that of the American, is very limited. To illustrate: the price of a good dog on the peninsula during the year 1900 was from $100 to $150. A miner meeting a native a little distance in the interior was attracted by the appearance of one of his dogs and desired to purchase the animal. On asking the price the native replied, "I will take $100 for the dog, or a bottle of whiskey."

Of all the uncivilized nations of the globe none range over a wider space than the Eskimo, whose various tribes extend from Greenland and Labrador, over all the coasts of Arctic America, to the Aleutian chain and the extreme north-eastern point of Asia. They sojourn as high as the 80th degree of northern latitude,

and probably roam even still higher on the still undiscovered coasts beyond—a nearness to the pole no other race is known to reach.

The old Scandinavian settlers in Greenland expressed their dislike for them in the contemptuous name of Skraelingers (screamers or wretches); the seamen of the Hudson's Bay ships, who trade annually with the natives of Northern Labrador and the Savage Islands, have long called them "Seymos" or "Suckemos," names evidently derived from the cries of "Seymo," or "Teymo," with which they greet the arrival of the ships; they speak of themselves simply as "Inuit," or men.

With few exceptions the whole of the vast region they inhabit lies beyond the extremest limits of forest growth, in the most desolate and inhospitable countries of the globe. The rough winds of the polar seas almost perpetually blow over their bleak domains, and thus only a few plants of the hardiest nature—lichens and mosses, grasses, saxifragas, and willows—are able to subsist there, and to afford a scanty supply of food to a few land animals and birds. Ill indeed would it fare with the Eskimo, if they were reduced to live upon the niggardly produce of the soil; but the sea, with its cetaceans and fishes, amply provides for their wants. Thus they are never found at any considerable distance from the ocean, and they line a considerable part of the coasts of the Arctic seas without ever visiting the interior.

It is curious to observe how exactly, amidst all diversity of time and place, these people have preserved unaltered their habits and manners. The broad, flat face, widest just below the eyes, the forehead generally narrow

NATIVE BELLES.

and tapering upward; the eyes narrow and more or less oblique; all indicate a Mongol or Tartar type, differing greatly from the features of the Red Indian tribes. Their complexion, when relieved from smoke and dirt, also approaches more nearly to white than that of their copper-colored neighbors. Most of the men are rather under the medium English size, but they cannot be said to be a dwarfish race. The females, however, are all comparatively short. The Eskimo are all remarkably broad-shouldered, and though their muscles are not so firm as those of the American sailors, they surpass in bodily strength all the other natives of America. In both sexes the hands and feet are remarkably small and well-formed. From exercise in hunting the seal and walrus, the muscles of the arms and back are much developed in the men, who are, moreover, powerful wrestlers. When young, the Eskimo looks cheerful and good humored, and the females exhibit, when laughing, a set of very white teeth. Could they be induced to wash their faces, many of these savage beauties would be found to possess a complexion scarcely a shade darker than that of a deep brunette. Though disinclined to ablutions, for which the severity of their climate may serve as an excuse, they are far from neglecting the arts of the toilette.

The Eskimo women tastefully plait their straight, black, and glossy hair; and great deference is paid to them by the men. They also generally tattoo their chin, forehead, and cheeks, not, however, as in the South Sea Islands, with elaborate patterns, but with a few simple lines, which have a not unpleasing effect.

From Behring's Straits eastward as far as the Mackenzie, the males pierce the lower lip near each angle of the mouth, and fill the apertures with labrets of blue or green quartz, or of ivory resembling buttons. Many also pierce the septum of the nose, and insert a dentalium shell or ivory needle. Like the Red Indians they are fond of beads, but their most common ornament consists in strings of teeth of the fox or wolf—sometimes many hundreds in number—which are either attached to the lower part of the jacket, or fastened as a belt round the waist.

Their dress is admirably adapted to the severity of the climate. With their two pairs of breeches made of reindeer or sealskin, the outer one having the hair outside and the inner one next the body, and their two jackets—of which the upper one is provided with a great hood—with their water-tight seal-skin boots, lined with the downy skins of birds, and their enormous gloves, they bid defiance to the severest cold, and even in the hardest weather pursue their occupations in the open air whenever the moon is in the sky, or during the doubtful meridian twilight. The women are perfect in the art of making water-tight shirts or "kamleikas," of the entrails of the seal or walrus, which in summer serve to replace their heavy skin jackets. They also sew their boots so tight that not the slightest wet can penetrate, and with a neatness of which the best shoemaker might be proud. The dress of the two sexes is much alike, the outer jacket having a skirt before and behind, but that of the females is a little longer and pointed. The women wear larger hoods, in which they carry their chil-

ESKIMO KAYAK.

dren; and sometimes (as in Labrador) the inner boot has in front a long, pointed flap to answer the same purpose.

Their most ingenious invention is unquestionably that of the one-seated boat, the "kayak," or the "baidar." A light, long, and narrow frame of wood, seal or walrus bone, is covered water-tight with seal-skin, leaving but one circular hole in the middle. In this the Eskimo sits with outstretched legs, and binds a sack (which is formed of the intestines of the whale, or of the skins of young seals, and fits in the opening) so tightly round his middle, that even in a heavy sea not a drop of water can penetrate into the boat. Striking with his light oar (which is paddled at each extremity) alternately to the right and to the left, his spear or harpoon before him, and maintaining his equilibrium with all the dexterity of a rope-dancer, he flies like an arrow over the water; should a wave upset him, he knows how to right himself by the action of the paddle. The "oomiak," or women's boat, likewise consists of a frame-work covered with seal-skins, and is roomy enough to hold ten or twelve people, with benches for the women who row or paddle. The mast supports a triangular sail made of the entrails of seals and easily distended by the wind. The men would consider it beneath their dignity to row in one of these omnibus boats; they leave this labor entirely to the women, who, to the rythm of a monotonous song, slowly propel the oomiak through the water.

The weapons of the Eskimo, and their various fishing and hunting implements, likewise show great

ingenuity and skill. They have several kinds of spears or darts, adapted to the size of the various animals which they hunt; and their elastic bows, strongly bound with strings of seal-gut, drive a six-foot arrow with unerring certainty to a distant mark. To bring down a larger animal, the shaft is armed with a sharp flint or a pointed bone; if intended to strike a bird, it is smaller and blunted.

The harpoons and lances used in killing whales or seals have long shafts of wood or of the narwhal's tooth, and the barbed point is so constructed that, when the blow takes effect, it is left sticking in the body of the animal, while the shaft attached to it by a string is disengaged from the socket and becomes a buoy of wood. Seal-skins, blown up like bladders, are likewise used as buoys for the whale-spears, being adroitly stripped from the animal so that all the natural apertures are easily made air-tight.

With equal industry and skill the Eskimo put to use almost every part of the land and marine animals which they chase. Knives, spear-points and fishhooks are made of the horns and bones of the deer. The ribs of the whale are used in roofing huts or in the construction of sledges, where drift-timber is scarce. Strong cord is made from strips of seal-skin hide and the sinews of walrus and deer furnish bow-strings, or cord to make nets or snares. In default of drift-wood, the bones of the whale are employed for the construction of their sledges, in pieces fitted to each other with neatness, and firmly sewed together.

During the long confinement to their huts or

GROUP OF NATIVES.

"igloos" in the dark winter months, the men execute some very fair figures in bone, from walrus tusks or in fossil ivory, besides making fishhooks, knife handles, and other instruments of these materials, or of metal or wood.

The multitude of swan, duck and geese resorting to the morasses of the northern coasts to breed, likewise aid in supplying the Eskimo with food during their short but busy summer.

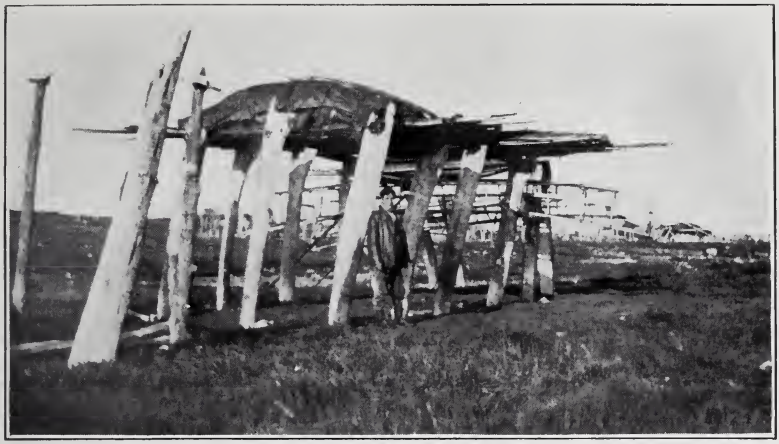
On the coasts frequented by whales, the month of August is devoted to the pursuit of these animals; a successful chase insuring a comfortable winter to a whole community. Their capture requires an association of labor; hence along the coast of the Arctic Ocean the Eskimo unite their huts into villages, for whose site a bold point of coast is generally chosen, where the water is deep enough to float a whale.

When one of these huge creatures is seen lying on the water, a dozen or more kayaks cautiously paddle up astern of him, till a single canoe, preceding the rest, comes close to him on one quarter, so as to enable the men to drive the spear into the animal with all the force of both arms. This spear has a long line of thong and an inflated seal-skin attached to it. The stricken whale immediately dives; but when he re-appears after some time, all the canoes again paddle toward him, some warning being given by the seal-skin buoy floating on the surface. Each man being furnished like the first, they repeat the blow as often as they find opportunity, till perhaps every line has been thus employed. After chasing him in this manner, sometimes for half a day,

he is at length so wearied by the resistance of the buoys and exhausted by loss of blood as to be obliged to rise more and more often to the surface, and is finally killed and towed ashore.

Though in many parts seals are caught at every season of the year, yet the great hunt takes place in spring, when they play in the open lanes near the coasts, or come out on the ice to bask in the sun. In spite of their wariness, they are no match for the Eskimo, who have carefully studied all their habits from infancy. Sometimes the hunter approaches them by imitating their forms and motions so perfectly that the poor animals are not undeceived until one of them is struck with the lance; or else, by means of a white screen pushed forward on a sledge, the hunter comes within range and picks out the best-conditioned of the band. As the season draws near midsummer, the seals are more approachable; their eyes being so congested by the glare of the sun that they are sometimes nearly blind. In winter they are assaulted while working at their breathing-holes or when coming up for respiration.

As the polar bear is as great a seal hunter as the Eskimo, one of the usual methods employed by the latter to catch these bears is to imitate the motions of the seal by lying flat on the ice until the bear approaches sufficiently near to insure a good aim; but a gun is neeessary to practice this stratagem with success. Another ingenious mode of capturing the bear is by taking advantage of the well-known voracity of the animal, which generally swallows its food without much mastication. A thick and strong piece of whalebone, about



NATIVE CACHE ELEVATED ON WHALE BONE.

DOG-TEAM AND PILES OF FREIGHT, NOME BEACH.

four inches broad and two feet long, is rolled up into a small compass and carefully enveloped in blubber, forming a round ball. It is then placed in the open air at a low temperature, where it soon becomes hard and frozen. The natives, armed with their knives, bows and arrows, together with this frozen bait, proceed in quest of the bear. As soon as the animal is seen, one of the natives discharges an arrow at it; the monster, smarting from this assault, chases the party then in full retreat, until, meeting with the frozen blubber dropped in his path, he greedily swallows it and continues the pursuit—doubtless fancying that there must be more where that came from. The natural heat of the body soon causes the blubber to thaw, when the whalebone, thus freed, springs back, frightfully lacerating the stomach. The writhing brute falls down in helpless agony, and the Eskimo, hurrying to the spot, puts an end to his sufferings.

While the seal, narwhal, and white whale furnish the staple food of the more southern Greenlander, the walrus is the chief resource of the Eskimo. The manner of hunting this animal depends much on the season of the year. In spring, or the breeding season when the walrus is in his glory, he is taken in two ways. Sometimes he has risen by the side of an iceberg, where the currents have worn away the floe, or through a tide crack, and, enjoying the sunshine too long, finds his retreat cut off by the freezing up of the opening; for like the seal, the walrus can only work from below at his breathing-hole. When thus caught, the Eskimo, who with keen hunter-craft are scouring the floes, scent him out by their dogs and spear him. Frequently the

female and her calf accompanied by the green-visaged father are seen surging, in loving trios, from crack to crack, and sporting in the openings. While thus on their tour, they invite their vigilant enemies to the second method of capture. This also is by the lance and harpoon; but it often becomes a regular battle, the male gallantly fronting the assault, and charging the hunters with furious bravery. In the fall, when the pack is but partially closed, the walrus are found in numbers hanging around the neutral region of mixed ice and water, and, as this becomes solid with the advance of winter, following it more and more to the south.

The Eskimo at this season approach them over the young ice, and assail them in cracks and holes with harpoon and line. This fishery, as the season grows colder, darker and more tempestuous, is fearfully hazardous.

It may be supposed that among so cheerful a people as the Eskimo there are many games and sports practised. One of their exhibitions consists in making hideous faces by drawing both lips into the mouth, poking forward the chin, squinting frightfully, occasionally shutting one eye and moving the head from side to side as if the neck had been dislocated.

Another performance consists in repeating certain words with a guttural tone resembling ventriloquism, staring at the same time in such a manner as to make their eyes appear ready to burst out of their sockets with the exertion. Two or more will sometimes stand up face to face and, with great quickness and regularity, respond to each other, keeping such exact time that the

WIFE AND CHILD OF LAPLAND REINDEER HERDER.
THE MOST PICTURESQUE BIT OF COLOR OF THE PENINSULA.

sound appears to come from one throat instead of several. They are fond of music, both vocal and instrumental, but their singing is not much better than a howl.

The Eskimo have neither magistrates nor laws, yet they are orderly in their conduct toward each other. The constitution of their society is patriarchal, but there is no recognition of mastership except such as may be claimed by superior prowess. The rule of the head of a family lasts only so long as he has vigor enough to secure success in hunting. When his powers of mind and body are impaired by age he at once sinks in the social scale, associates with the women and takes his seat in the oumiak. They rarely quarrel among themselves, settling their disputes either by boxing, the parties sitting down and striking blows alternately until one of them gives in or before a court of honor where, after the accuser and the accused have richly abused and ridiculed each other, the case is decided by the priests or "angekoks." These wonder-workers, who enjoy a great reputation as sorcerers, soothsayers or medicine-men, employ ventriloquism, swallow knives, extract stones from various parts of their bodies, and use other deceptions to impress their dupes with a high opinion of their supernatural powers. Like the members of the learned professions elsewhere, they have a certain language or jargon of their own, in which they communicate with each other. The heathen Eskimo do not appear to have any idea of the existence of one Supreme Being, but believe in a number of spirits with whom on

certain occasions the angekoks pretend to hold mysterious intercourse.

In their behavior to the old and infirm they betray the insensibility, or rather inhumanity, commonly found among savage nations, frequently abandoning them to their fate on their journeys, allowing them to perish in the wilderness.

Among themselves "Tiglikpok" (he is a thief) is a term of reproach, but they steal without scruple from strangers and are not ashamed when detected. They have been taxed with want of gratitude; and though they have no doubt rendered good services to many of our Arctic navigators, yet sometimes, when they fancied themselves the stronger party, they have not hesitated to attack or to murder the strangers, and their good behavior can only be relied upon so long as there is the power of enforcing it.

One of the most amiable traits of their character is the kindness with which they treat their children,whose gentleness and docility are such as to occasion their parents little trouble, and to render severity towards them quite unnecessary. Even from their earliest infancy they possess that quiet disposition, gentleness of demeanor and uncommon evenness of temper for which, in mature age, they are distinguished.

When not more than eight years old the boys are taken by their fathers on their sealing excursions, where they begin to learn their future business; and even at that early age they are occasionally intrusted to bring home a sledge and dogs from a distance of several miles over the ice. At the age of eleven we

see a boy with his water-tight boots, spear in hand and a small coil of line at his back, accompanying the men to the fishing under all conditions; and from this time his services daily increase in value to the whole tribe.

In intelligence and susceptibility of civilization the Eskimo are far superior to the Indians. They have such a good idea of the hydrography and bearings of the sea-coasts which they frequent as to draw accurate charts of them. The Eskimo have a decided predilection for commercial pursuits, and undertake long voyages for the purpose of trade. Tea, coffee, sugar, cloth, knives and hatchets are the things for which they most desire to barter their furs. They use little tobacco, the habit having never taken the same hold upon them that it almost invariably has on natives who come in contact with the whites.

Despite the many attempts made to care for them, the Eskimo are disappearing from the face of the earth more rapidly than any other distinct people.

CHAPTER VI.

THE GREAT STORM OF SEPTEMBER 12TH, 1900.

NOME'S water front emerged on the morning of September 13th, 1900, from the most terrific storm which has ever beset it in the knowledge of her white inhabitants. The spectacle unfolded by the return of daylight was grand and yet appalling. Though the fury of the wind had somewhat abated and the tremendous tide had partly receded, the angry sea still raged. An untold quantity of debris—lumber piles, wreckage of ships, barrels of liquor, tents, sails, masts, building paper—covered the surface of the near waters and tumbled about in wild confusion in the clutch of the surf.

Only through a personal inspection could one attain a conception of the wonderful spectacle. The people in thousands braved the elements throughout the night and day to view a scene which will leave an everlasting impression on their memories. Worst of all was the loss of life which attended the storm. The number of deaths will never be known, but that they must have been numerous is undoubted. Hundreds of the inhabitants of Nome were bereft of their small belongings and rendered homeless by the washing away of their tents and houses; and this extended far up the Snake River and Dry Creek bottoms, as well as for miles along the beach.

On the afternoon of the 12th, at 3.30 o'clock, a

BEACH AT NOME AFTER A STORM.

southeaster was piping a gale. The mammoth barge "Skookum," staunchest of all the storm-tossed fleet, after battling the season's elements, dragged her anchor and started on the journey towards the beach and destruction. After the "Skookum" had struggled an hour or so, the little tug "American", and a steam launch, which were tied astern of the doomed barge, began to show signs of succumbing to the heavy sea. They popped and bobbed about it on the crest of the swell until they both were caught broadside in the waves and went down, with those on board.

Fully a thousand excited people crowded down the beach, as close as it was safe to do so, to watch the "Skookum" grind her vitals on the sand. In the long drag from her mooring she did not swerve to the right or left more than a hundred feet. She drifted broadside towards the shore and landed upon the beach just below the lower extremity of the military reservation. The waves broke clear over the ill-fated barge and carried away everything that was not securely lashed down. For fully an hour the great strength of her hull and keel stood the merciless pounding before breaking. Shortly before midnight, however, when the storm and surf were at their height, the "Skookum" with a mighty crash broke in two.

The thirteen men who were on board did not succeed in getting ashore until 3 P. M. Several of them made frantic efforts to leave the barge, but the cooler heads restrained them. They succeeded in getting aboard a lighter that was wedged between the "Skookum" and the shore and from the lighter they were dragged,

one by one, by a coil of rope through surf and wreckage. Several men were severely scratched and bruised but none seriously injured.

With the sudden rising of the tide the monster breakers came surging in from the sea, carrying ruin and destruction before them. Buildings along the south side of River Street were picked up bodily for a distance of two blocks and dashed against those of the opposite side. Many of these were immediately wrecked and the pieces carried away by the waves; others, more substantial in construction, held out for varying periods; nearly all were in the end reduced to kindling wood. Those buildings beyond the reach of the waves were flooded with water. Only in a few instances were goods saved, so unexpected and sudden was the onslaught of the waves. Self-preservation became the first great care, and the saving of property subordinate to the saving of lives.

The "beach-combers" were out in full force, tempted by the valuable articles to be snatched from the waves. Thousands of feet of lumber of all kinds were thus secured, while many drew up sashes and doors, tents, boats, coal, whiskey, beer and even champagne. The soldiers were early put on guard and some property was saved to the owners. Many collisions between the military and "beach combers" took place and a number of arrests were made. Considerable drunkenness also followed the recovery of the barrels of liquor. Hundreds of hustling fellows devoted themselves to laying up fire wood. Various estimates were heard of the number of persons rendered homeless by the waters, the general

WRECK OF THE GREAT "SKOOKUM ON THE NORTH BEACH.

This vessel carried over 1,000 people, as many head of cattle, several million feet of lumber, and great quantities of general merchandise.

opinion being that one thousand was a reasonable figure. That many of these unfortunate ones suffered severely is undoubted.

A serious loss to the camp was that of ten thousand tons of coal drawn into the sea. Owing to the lateness of the season this could not be replaced, and the supply of fuel for the winter was accordingly short. The price of the article being materially increased thereby, another hardship was thus entailed on the people as a result of the storm.

CHAPTER VII.

NOME'S ADVENT AS A PERMANENT MINING FIELD.

By JOHN D. LEEDY.

THE Nome District of Alaska has made marked progress during the past few years, both in the direction of a wider knowledge of the mineral resources of the region and in the development of facilities for more efficient mining on a large scale and by modern methods.

The Seward Peninsula, of which Nome is the distributing point, has become recognized as one of the important gold fields of the world, but the status and prospects of the industry there are but vaguely understood by the general mining public.

By the outside world, the Nome District is generally taken to include the whole Seward Peninsula, which extends about two hundred miles westward to Behring Straits and has an extreme width of about one hundred and fifty miles between the Arctic Ocean and Behring Sea. The Nome District, as an organized mining district, comprises an area stretching about fifty miles along the coast and reaching about seventy-five miles inland. Up to 1902, mining on the Peninsula was practically confined to this district, and the great bulk of the Thirty Million Dollars and more in gold that has been produced to date has come from this district and from that portion of it lying within six or seven miles of Nome. During the past year prospecting was widespread throughout

WORKING AN "OLD CHANNEL" ON ANVIL CREEK.

The wasteful and expensive method employed seemed then the only one possible.

the Peninsula and it will be more widely and extensively carried on during the coming season. It has been found that practically all of the streams and gulches of the Peninsula contain gold, but only a few have been found to be large bonanzas with the past pick and shovel methods.

In 1902 three especially noteworthy new placer districts were developed outside of the Nome District proper. These were on Ophir Creek, a tributary of the Neukluk River, about sixty miles northeast of Nome in a direct line; on Solomon River, which empties into Behring Sea about thirty miles east of Nome; and on Candle Creek, near Kotzebue Sound, on the northern or Arctic side of the Peninsula. Of these, Ophir Creek is much the largest and most important, having proved very rich and having yielded One Million Seven Hundred and Fifty Thousand Dollars during this past season. Council City, near this creek, has become an important and lively mining camp.

In 1903 and 1904 other new and important discoveries were made and new districts organized. The most important of these are the Inmachuk and Kugruk, sections of the Fairhaven Mining District, and the Sinook (invariably pronounced Sinrock) tributaries in the Nome District. The former streams have both been important producers during the past year and from prospects found in the latter the indications are that it will rapidly advance as a producer.

The majority of claims are held singly by individuals and in groups by companies, and the production up to 1902 had been principally by the crude methods of the pick, shovel and sluice-box. Scores of gasoline

pumping engines were installed to meet the difficulties of water supply, but proved entirely inadequate. The water was generally handled with pumps and reservoirs and was often used two or three times.

As the richest streams were exhausted, new and important deposits were found in old channels, paralleling the same, and also deep and extensive deposits in the low-lying tundra claims near the sea shore.

During the early days of the great strike at Nome, little attention was paid to the Solomon River, the Sinook river, the Feather River and the Kugruk River, but during the past two seasons it has been demonstrated that the beds of these rivers, and the benches (high ground) situated along their banks, are as rich in gold as any section of the country heretofore exploited.

The discovery of these deposits has induced capital to begin the construction of extensive ditch systems which will, when completed, appropriate all the available water and convey it to all of the deposits. They will then be worked on a much more extensive scale, and at the same time more economically.

The rich discoveries made in the Nome District by Lindeberg, Lindbloom and Brynteson in 1898, followed by the unparalleled discovery and production of the beach sands in the following year, led to the influx of a multitude of inexperienced argonauts, most of whom were the worst for going.

The winter population of the Seward Peninsula is now about thirty-five hundred. The population last summer was between eight and ten thousand and it will be as large next June.

JAFET LINDEBERG PANNING ON A RICH CLAIM.

Aside from the climatic conditions and those governing travel and transportation, two especially unfavorable conditions exist, particularly in the Nome District. One is the flat character of the country, resulting in a lack of sufficient fall to give dump room. The other is a lack of sufficient water and water pressure. The former condition will be met by the use of hydraulic elevators or "lifts," several of which were put into successful operation last season. Many more will undoubtedly follow, as water supplies are developed and will be operated at pressures of from 100 to 350 feet. The second condition is being met by the construction of extensive ditch systems.

The cost of mining with the sluice box in this district has been over One Dollar per cubic yard in nearly all cases and in some cases has exceeded Two Dollars to the cubic yard. With adequate water supply and the use of hydraulic lifts and bed-rock flumes, the cost will probably, under favorable conditions, not exceed a few cents per cubic yard. It is not likely, however, that for some time to come ground averaging less than fifty cents per cubic yard will be considered pay ground. The Nome District has just reached the period of large scale mining, with adequate capital and efficient methods. The development in this direction has distinguished the years 1903 and 1904, and will be still more marked during the coming season. It has been due to the presence of a few companies with large capital and with the perception and enterprise necessary to

provide efficient mining equipment. About a dozen companies and partnerships owning large groups of claims and the capital needed for development are now operating in the district on a large scale. The operations of these companies and the development of outside districts will undoubtedly largely increase the output in 1905. When the ditch systems and mining plants now under construction or planned are in full operation a further increase of the output will follow. Among the leading men in the development of the country have been Charles D. Lane, Messrs. Davidson, Leland and Bliss, Jafet Lindeberg, Dr. Cabell Whitehead, Major L. H. French, D. M. Brogan and others.

During the summer of 1899, Mr. Lane looked thoroughly over the districts and formulated the plan which he has carried out on so large a scale, with such courageous enterprise, and in the face of so many obstacles. He saw that a railroad across the tundra, which was almost impassable in summer, was indispensable for the transportation of machinery and supplies. The first steamers in 1900 took up complete material and equipment for four miles of narrow gauge railway. It was a unique railroad in various ways. No grading was done. Heavy planks were put down on the muddy and mossy surface of the tundra and on this bed the ties were laid. The rails were rapidly spiked down and the road put into operation. The plank bed steadily sank and often the rails were out of sight for considerable distances, but the trains were kept running, hauling passengers and freight in the daytime and ballast at night. Later, the road was extended about six miles

SOLOMON RIVER DITCH CO.
CHAS. D. LANE PRESIDENT WILD GOOSE MINING CO.
JAFET LINDEBERG PRESIDENT PIONEER MINING CO.
FRANK SHAW MANAGER WILD GOOSE MINING CO.
J. H. ADAMS PRESIDENT ADAMS HYDRAULIC LIFT CO.
ALBERT FINK COUNSEL WILD GOOSE MINING CO.
L. H. FRENCH SOLOMON RIVER DITCH CO.

to the east side of King Mountain and will probably be extended as far as Hobson Creek next season. It has been an enormous advantage to the district and has exceeded all expectations in earning profits.

Mr. Lane has installed a large pumping plant on Snake River, a short distance above Nome, with an eighteen inch connecting pipe line four miles in length. Through this pipe water is forced at the rate of three thousand gallons per minute with one straight lift to an elevation of over seven hundred feet. From this point water is conveyed by a ditch and flume two and a half miles to the "Mattie Claim" where it is used through a monitor to work the auriferous gravel. It is again picked up by a ditch and carried down to No. 8 above Discovery on Anvil Creek; there it is used in ground sluicing, discharged into Anvil Creek and yet again picked up at the upper end of No. 7 above Discovery and by ditch and flume conveyed to No. 4, being used again at that point. The company by this means has the advantage of using the same water three times and derives a revenue, after discharging it, from operators yet lower down on the stream. Mr. Lane has duplicated his Nome operations in the Council City District on Ophir Creek, with the exception of the pumping plant. Here he has another railroad, seven and a half miles long, running from Council City to Ophir Creek, where he is operating successfully with three hydraulic lifts. Here the depth of gravel makes it impracticable to work with the ordinary sluice-box, pick and shovel, but with the present modern methods this stream will yield immense profits for many years to come.

Mr. Lane has this year completed a ditch seventeen miles long to furnish water for his operations. This ditch is ten feet wide at the bottom, sixteen feet at the top and three feet deep. The same was found to be insufficient for all the properties and a larger one is now under construction which will convey six thousand miner's inches of water from the Paragon River to Ophir Creek.

The water supply for the Seward Peninsula was very short during the past season, but Mr. Lane's company (the Wild Goose Mining and Trading Co.) this year paid a dividend of 30 per cent. from a working season of one hundred days.

Major L. H. French, the author of these notes, has been a most important factor in the development of that country, although his first attempts at mining on a large scale in this section were not crowned with success. Yet his indomitable courage and enterprise have led him to undertake many later mining ventures on an even larger scale and with almost invariable success. In this chapter, I am prohibited from giving an account of the many improvements in mining methods which he has introduced and of the successful enterprises he has fathered.

The ditch system which he and Mr. D. M. Brogan finished in 1904 is as important an undertaking and has been crowned withas great success as any similar enterprise in Alaska. It was he who first introduced the use of steam shovels into Alaska and in many places where other methods are not feasible, the use of steam-shovels has been eminently successful.

Major French's camps are equally well known on

A COSTLY METHOD OF HANDLING DIRT.

account of the unfailing hospitality which is accorded to all, and on account of their neatness, comfort and systematic conduct.

The Inmachuk River and vicinity has taken its place in the ranks of producers. It is forty miles long and empties into Kotzebue Sound at Deering, about forty-five miles from Candle City. The mining so far has been confined to a section of the stream about six miles long, the nearest point of which is about eighteen miles from the coast at Deering. The ground hitherto mined has been all frozen and steam thawers were necessary in all cases to extract the gold. Expensive fuel and cost of transportation has greatly retarded production, but the many small operators have been able by crude methods, using windlasses for hoisting, to make handsome profit. When cheaper fuel is obtained the profits will be correspondingly greater as some very rich deposits have been uncovered.

The Kugruk River, on which remarkably rich strikes have been made lately, empties into Kotzebue Sound and runs parallel to the Inmachuk. Here several steam thawers had been installed at the close of the past season and some rich deposits had been uncovered, making the operators confident of larger returns from their spring clean-up than were taken from the Inmachuk last spring under practically the same conconditions.

It will be a surprise to many of the old beach miners to know that Nome possesses another and ancient beach deposit. At the base of the parallel terrace about one-half mile back from the shore one has

been opened for a distance of ten miles east of the town of Nome, and has added much to the production of the district during the past year. This pay-streak has, in many places, been found as rich as the old beach streak of '99, though the profits have been smaller owing to the ten to fourteen feet of overburden which is all frozen, necessitating steam-thawers. Handsome returns have accrued to many of the operators and in all cases considerable profits were obtained.

The vast area comprising the Kougarok District, although located in 1900 and almost abandoned in 1901, is yet to become a steady producer according to late reliable reports. Some few miners have remained in this district since its discovery, and most of them have been richly rewarded. Ground has been uncovered running as high as Two Hundred and Twenty-Two Dollars to the pan. Recent discoveries have extended over this area and have assumed sufficient proportions to interest large capital during the past year. At present there are several companies operating, several extensive ditch systems are now in the course of construction and, from the latest reports, it is to be expected that the Kougarok District will be second to none on the Seward Peninsula in the near future.

The Topkok District, situated about sixty miles east of Nome, is well known from its having produced Six Hundred Thousand Dollars from the beach sands in the summer of 1900. The richest gold bearing streams are Daniels and Eldorado Creeks. On these streams large deposits of auriferous gravel have been found. Until this year, however, little work has

GROUP OF MEN IN CHARGE OF AND SUPERINTENDING MINING OPERATIONS CONDUCTED BY THE AUTHOR.

been done owing to a scarcity of water. A ditch was completed last year by the Topkok Ditch Company to convey water from the Kutcherblok River to these deposits, a distance of twenty-two miles. For two miles of this the water was conveyed by an inverted siphon, and the remaining twenty by a ditch and flume. Owing to an extremely dry season, the company had only twenty days of water with which to operate this year, but were rewarded by a production, in that time, of over One Hundred Thousand Dollars. As they had sufficient fall to install a bedrock flume, instead of a hydraulic lift, the cost of extraction was reduced to about seventeen cents per cubic yard and this the company expect to be able to reduce considerably next year. They have at present about twelve hundred feet of bedrock flume dumping their tailings into Behring Sea, which removes them as fast as they are deposited.

Since the discovery of gold at Nome, the Solomon River District, which is about thirty miles east of Nome, has been known to contain valuable deposits of auriferous gravel. Kasson and Mystery Creeks, both tributaries of Shovel Creek, were about the only ones to furnish any considerable profit to their owners with pick and shovel work. Some handsome returns should be made this year when lifts are installed. Several companies have already commenced the construction of ditches to divert water from the main river. There is an extensive area of pay gravel in this district, as the stream drains a large section of country. Low grade ground has been found from above the forks of the stream nearly to its mouth, a distance of about eighteen

miles. The deposit increases in width as the river widens.

Only one stream on the Peninsula, thus far discovered, has been found to contain low grade gold and one, also, to contain very high grade. The former is Dorothy Creek at the head of Nome River, where the presence of silver in the gold reduces its value to less than fifteen dollars per ounce in the bar after melting. The latter is "Allean" gulch, a tributary of the Agiapuk. It is found to produce gold worth nineteen dollars and eighty cents per ounce. The value of gold from all other creeks on the Peninsula does not vary much in fineness, the average being about eight hundred and ninety fine.

The mining situation on the Seward Peninsula is to-day a most attractive one. Rich and continuous deposits of gravel have been uncovered extending from the seashore at Nome back to an elevation of five hundred feet above the sea. It is simply a matter of the intelligent use of capital on business principles to give handsome returns for many years to come.

JOHN D. LEEDY.

NUGGETS FROM ANVIL CREEK. LARGEST SHOWN HERE WEIGHS ONE AND ONE-HALF POUNDS.

CHAPTER VIII.

ROUTES TO THE GOLD FIELDS.

THE shortest and quickest route from the States to the Nome region is by ocean steamer. From Seattle we traverse the Northern Pacific Ocean and Behring Sea direct to Nome. The distance is about two thousand, three hundred miles; and, under favorable circumstances, ten days are required to make the trip. Some of the largest and most commodious steamers of the Pacific coast ply on this route. A stop for coal and water is usually made at Unalaska, an island of the Aleutian Group, between the Pacific Ocean and Behring Sea. Freight rates from Seattle to Nome are usually quoted at $20 per ton, first cabin passenger rates $100, second cabin $60, and steerage $35.

On account of the ice in Behring Sea, the season for ocean transportation to Nome is, as a rule, restricted to a period of five months, *i. e.*, from early June to early November. During the remainder of the year the northwest coast of Alaska is ice bound and not accessible by vessels.

Another summer route is the inland or Yukon route. This is by ocean steamer from Seattle to Skagway; thence by the White Pass and Yukon Railway over the Coast Range to Lake Bennett, the headwaters of the Yukon. From there we go by boat down the Yukon to St. Michael, and thence take steamer for Nome. This route is not nearly so direct or expeditious as the all-ocean route, frequent changes and delays being usually

involved. There is a change of river steamers on the upper waters of the Yukon, covering Miles Canyon and White Horse Rapids. The portage around this is three miles by horse tramway. Skagway is open to ocean vessels the year round; but, as the ice does not leave the lakes and the upper Yukon until nearly June, the route offers little or no gain to the Nome-bound passenger, so far as reaching his destination early in the season is concerned. As a return route the Yukon is not practicable. No boats leave St. Michael later than the first week in September, on account of the ice which in that month forms on its upper waters. The chief advantage of the Yukon route consists in its enabling the passenger to escape an open sea voyage.

Travel and transportation in the Nome region are principally by small boats along the coast waterways and streams of sufficient size. Across the country there are, as yet, few definite or well-marked trails. The country is not, however, of so rugged a character but that one can without much difficulty proceed in almost any direction. During the summer pack trains of horses are employed in conveying freight and supplies from Nome to the gulch diggings. Teaming by wagon to these points is also done. About Nome, during the summer season, freighting is accomplished on wheeled vehicles drawn by horses, notwithstanding the fact that the tundra is usually soft for horse footing.

The use of dogs for sledding in this region has long been too well known to require further mention. The dog is superior, as a beast of burden, to the reindeer.

A TENT OFFICE ON A PAYING CLAIM.

PANNING.

There are, at present, some one thousand, or one thousand two hundred, government reindeer on the Seward Peninsula. They are scattered principally in stations along the southern part and on the coast, with centers at Golovin Bay and Port Clarence. Dogs are usually scarce in Alaskan mining regions during the winter season, on account of the fact that many people are off with their dog teams for one purpose or another. At Nome an average dog is worth from $50 to $100. A fair team generally consists of about nine dogs. In reindeer freighting the Lapland freight sledge, shaped like a boat, is employed. They are usually drawn by one or two reindeer. Where real sleds are used the sleds are very low, and the runners wide. A trained, or draft reindeer, is worth about $150.

Unfortunately there are no harbor facilities for ocean vessels in the Nome region. The only semblance in this line is the lagoon-like inlet known as Port Safety, about twenty-five miles east of Nome. It, however, is suitable only for small boats and for craft not drawing over eight feet of water.

Port Safety can in no wise accommodate sea-going vessels such as touch at Nome with freight and passengers. The nearest harbor for such vessels is Port Clarence, about seventy miles northwest of Nome.

About the first of October, 1900, those of our party who did not remain at Nome for the winter, embarked on the S. S. ———, bound for Seattle. After being a few days at sea the boilers gave out—tubes leaking so as to put fires out—and we spent a day or more rolling

in the trough of the sea, while they were repaired. After we had resumed our journey for another twenty-four hours they again broke down, and this time forty-eight hours were consumed in their repair. I was requested to approach the captain of the vessel and ask that we put into Dutch Harbor, then not far away, for repairs. The captain very frankly told me that if we should there meet a revenue cutter, and the condition of the boilers should become known to them, we would not be allowed to proceed to Seattle and might be compelled to remain in Dutch Harbor indefinitely. I really wanted to see Dutch Harbor, as we had not stopped there on our voyage north, but I had no desire to remain there indefinitely, so I agreed with him that the best thing we could do would be to "take chances" and continue our voyage as best we could. On later voyages I have had ample opportunity to inspect the very interesting villages of Unalaska and Dutch Harbor.

It became necessary, during the three weeks we consumed in reaching Seattle, to stop several times more to repair the boilers. Had a storm overtaken us, we should have been entirely at its mercy.

On the majority of vessels going to and coming from Nome, the stewards are men who are working their passage and who receive no wages. It will readily be seen that the service they perform is anything but satisfactory.

All vesesls carry many stowaways. In one instance, so many were discovered on board that the captain put back, had every passenger go ashore, made a thorough

INTERIOR OF SMALL MESS TENT.
(Showing types of miners.)

search for stowaways, and finally checked everybody off as they came on board.

When the voyage was about half over, provisions ran short, and we were compelled to dispense with one of our daily meals. The S. S. "City of Nome" was encountered at sea, and we secured some provisions from her. Altogether it was a most uncomfortable voyage, but no return voyage during the ensuing years has been agreeable. The storms of late fall are severe on Behring Sea and the North Pacific.

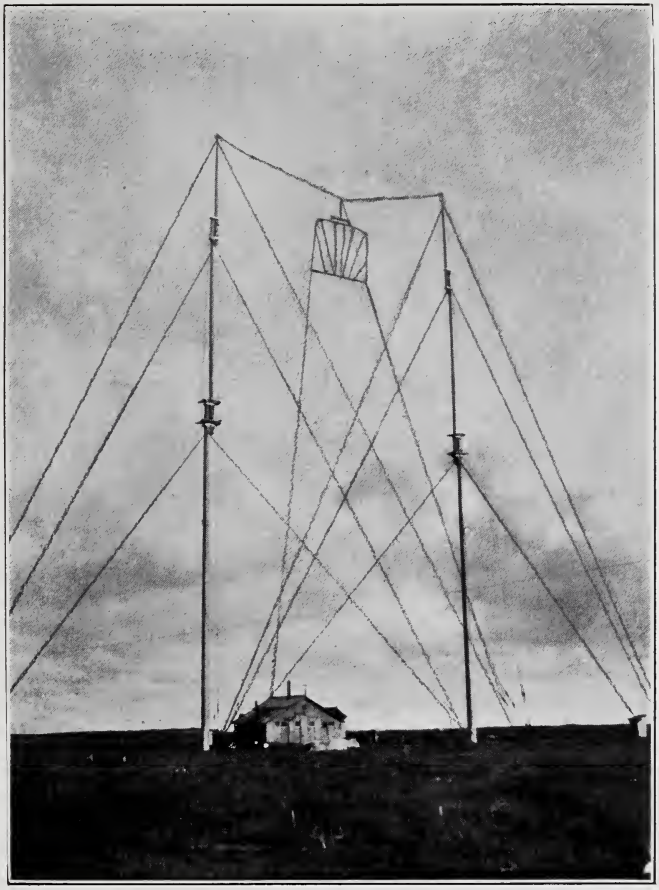
CHAPTER IX.

PRESIDENT ROOSEVELT'S VIEWS ON ALASKA.

PRESIDENT ROOSEVELT IN HIS MESSAGE TO CONGRESS, DECEMBER 7TH, 1904, MADE THE FOLLOWING REFERENCES TO AND RECOMMENDATIONS CONCERNING ALASKA.

ALASKA, like all our Territorial acquisitions, has proved resourceful beyond the expectations of those who made the purchase. It has become the home of many hardy, industrious and thrifty American citizens. Towns of a permanent character have been built. The extent of its wealth in minerals, timber, fisheries and agriculture, while great, is probably not yet comprehended in any just measure by our people. We do know, however, that from a very small beginning its products have grown until they are a steady and material contribution to the wealth of the nation. Owing to the immensity of Alaska and its location in the Far North it is a difficult matter to provide many things essential to its growth and to the happiness and comfort of its people by private enterprise alone. It should, therefore, receive reasonable aid from the government. The government has already done excellent work for Alaska in laying cables and building telegraph lines. This work has been done in the most economical and efficient way by the Signal Corps of the army.

In some respects it has outgrown its present laws,



HOW NOME COMMUNICATES WITH THE OUTSIDE WORLD.

Wireless telegraph station at Port Safety, twenty miles from Nome City.

while in others those laws have been found to be inadequate. In order to obtain information upon which I could rely I caused an official of the Department of Justice, in whose judgment I have confidence, to visit Alaska during the past summer for the purpose of ascertaining how government is administered there and what legislation is actually needed at present. A statement of the conditions found to exist, together with some recommendations and the reasons therefor, in which I strongly concur, will be found in the annual report of the Attorney General. In some instances I feel that the legislation suggested is so imperatively needed that I am moved briefly to emphasize the Attorney General's proposals.

Under the Code of Alaska, as it now stands, many purely administrative powers and duties devolve upon the district judges or upon the clerks of the district court acting under the direction of the judges; while the Governor, upon whom these powers and duties should logically fall, has nothing specific to do except to make annual reports, issue Thanksgiving Day proclamations and appoint Indian policemen and notaries public. I believe it essential to good government in Alaska, and therefore recommend, that the Congress divest the district judges and the clerks of their courts of the administrative or executive functions that they now exercise and cast them upon the Governor. This would not be an innovation; it would simply conform the government of Alaska to fundamental principles, making the Governorship a real instead of a merely nominal office, and

leaving the judges free to give their entire attention to their judicial duties, at the same time removing them from a great deal of the strife that now embarrasses the judicial office in Alaska.

I also recommend that the salaries of the district judges and district attorneys in Alaska be increased so as to make them equal to those received by corresponding officers in the United States, after deducting the difference in the cost of living; that the district attorneys should be prohibited from engaging in private practice; that United States commissioners be appointed by the Governor of the Territory instead of by the district judges, and that a fixed salary be provided for them, to take the place of the discredited "fee system," which should be abolished in all offices; that a mounted constabulary be created to police the territory outside the limits of incorporated towns—a vast section now wholly without police protection—and that some provision be made to at least lessen the oppressive delays and costs that now attend the prosecution of appeals from the District Court of Alaska. There should be a division of the existing judicial districts and an increase in the number of judges.

Alaska should have a Delegate in the Congress. Where possible, the Congress should aid in the construction of needed wagon roads. Additional lighthouses should be provided. In my judgment it is especially important to aid in such manner as seems just and feasible in the construction of a trunk line of railway to connect the Gulf of Alaska with the Yukon River through American territory. This would be

most beneficial to the development of the resources of the Territory, and to the comfort and welfare of its people.

Salmon hatcheries should be established in many different streams, so as to secure the preservation of this valuable food fish. Salmon fisheries and canneries should be prohibited on certain of the rivers where the mass of those Indians dwell who live almost exclusively on fish.

The Alaskan natives are kindly, intelligent, anxious to learn and willing to work. Those who have come under the influence of civilization, even for a limited period, have proved their capability of becoming self-supporting, self-respecting citizens, and ask only for the just enforcement of law and intelligent instruction and supervision. Others, living in more remote regions, simple hunters and fisher folk, who know only the life of the woods and the waters, are daily being confronted with twentieth century civilization with all of its complexities. Their country is being over-run by strangers, the game slaughtered and driven away, the streams depleted of fish; hitherto unknown and fatal diseases brought to them, all of which combine to produce a state of abject poverty which must result in their extinction. Action in their interest is demanded by every consideration of justice and humanity.

The needs of these people are:

The abolition of the present fee system, whereby the native is degraded, imposed upon and taught the injustice of law.

The establishment of hospitals at central points, so that contagious diseases, which are brought to them continually by incoming whites, may be localized and not allowed to become epidemic, to spread death and destitution over great areas.

The development of the educational system in the form of practical training in such industries as will assure the Indians self-support under the changed conditions in which they will have to live.

The duties of the office of the Governor should be extended to include the supervision of Indian affairs, with the necessary assistants in different districts. He should be provided with the means and the power to protect and advise the native people, to furnish medical treatment in time of epidemics, and to extend material relief in periods of famine and extreme destitution.

The Alaskan natives should be given the right to acquire, hold and dispose of property upon the same conditions as given other inhabitants, and the privilege of citizenship should be given to such as may be able to meet certain definite requirements.

MINING BY MACHINERY NEAR NOME.

CHAPTER X.

PROBABLE ORIGIN OF THE GOLD DEPOSITS IN NORTHWESTERN ALASKA.

THE Nome mining region is an ill-defined area in Northwestern Alaska. It lies near the entrance to Norton Sound, an arm of Behring Sea. It is named for an unimportant promonitory on the southern margin of the Seward Peninsula, which forms the northwest extremity of our continent, lying between the Arctic Ocean and Behring Sea. Captain Cook discovered it over a hundred years ago, and, skirting its shores west and northward, charted mountains, headlands and rivers, naming a number of them. Since then many vessels, particularly those of the United States Revenue Service, have visited the coast and extended the exploration and mapping. At present the United States Coast and Geodetic Survey is completing this work.

Nome City is situated directly on the sea coast, on the edge of the tundra, west of the cape which gives it its name, and east of another promontory called Cape Rodney. These two capes are about thirty miles apart. They are jutting extremities of a low mountain range, which curves around the tundra plain, defining a former shallow bay. Its outline is that of a low crescent, the inner curve being the even shore line.

The beach, which is everywhere low and smooth, consists of a fringe or narrow belt of sand and gravel,

its submarine portion being a gently sloping coastal shelf, with occasional low bars. During much of the time it is swept by heavy surf.

The beach rises gradually to a sharply-cut bench, a hundred to two hundred yards from the surf. From the edge of this terrace, which is about twenty feet high, the moss-covered tundra extends inland, rising uniformly two hundred feet in four or five miles, when it merges into the highland belt. In certain localities only do low terraces occur, apparently marking former stages in elevation above the sea level. The most pronounced of these terraces is about three miles northeast of Nome.

Locally the surface of the tundra is roughened by small, mossy hummocks a foot or two in height with corresponding depressions. This condition of the surface, and the general flatness of the country, gives a stagnant drainage which, together with the copious rainfall and thaw of the underground frost, renders the tundra wet and swampy throughout the summer season. Many ponds dot certain areas and it is traversed by deep, sluggish rivers and small streams taking tortuous courses from the mountains to the sea. The valleys of the larger streams are broad, with gentle slopes; those of the smaller narrow and trenchant, their edges being apparently protected from aerial erosion by the cover of moss. Along its northern edge the tundra merges into the alluvial flood plains of the larger valleys, thus extending into the mountains.

The mountains have rounded slopes, broken here and there by steep escarpments, and rise to an elevation of one thousand to two thousand feet.

FIRST STEAM SHOVEL TAKEN TO THE SEWARD PENINSULA.

At the southern base of these mountains, along the edge of the tundra, the contours are low and rounded and there are no well-defined foothills. The floors of the main valleys are rather flat and from one to three miles wide. Snake River valley is a good type of these. Proceeding northward, the mountains become more rugged and increase in height toward the axis of the range. Near the head of Snake River there are some peaks which, apparently, reach the elevation of permanent snow.

About eight miles north of Nome, between the heads of Anvil and Dexter Creeks, in the region on Mount King, some apparently marine benching and gravel terraces are found on the lower slopes of the mountains up to the height of about one thousand feet. They occur at irregular intervals, marking successive stages in an elevation of the land which, probably, is still in progress.

Most of the gold of this region has, so far, been obtained from placer deposits; these can be conveniently grouped as gulch placers, bar placers, beach placers, tundra placers and bench placers. Those of the gulches and benches have been important gold producers.

The drainage of the Nome region is all southward to the coast. The principal streams are Snake, Nome, Penny, Solomon, Bonanza, Sinook, Feather, Cripple and Kugruk Rivers. These are usually navigable for small boats for eight or ten miles from the mouth, as far up as the creek and gulch diggings. The current is generally rather swift, even through the tundra, while in the mountains many of the tributaries become torrents.

The amount of gold produced during the first season cannot be definitely estimated. From the best information I could gather, I believe that the production of gold from the entire belt, during the season of 1900, was above Seven Million Dollars.

The coarse gold is largely confined to the creek and gulch diggings; it ranges from the size of a pin head to nuggets weighing many ounces. Much of this gulch gold is about the size of No. 3 shot.

The gold is usually rounded and often smoothly polished, *i. e.*, having a water-worn character. In color it is dull, somewhat resembling tarnished brass. The nuggets are round and subangular but seldom flat. Small vitreous quartz masses are not infrequently found attached to the nuggets.

The creek gold usually occurs on or very near bed rock, under a thickness of five to eight feet of gravel. In the diggings the pay streak is of varying thickness, although the gravel usually carries some gold, or at least good colors, from the surface down. The flood plain —or gravel deposits of the stream—in or beneath which the gold occurs, when measured from rim rock to rim rock, varies in width on different creeks from twenty to several hundred feet.

A cross section of the gravels, at any given point, would show the gold to be not evenly distributed, but, more or less, gathered into zones. This pay streak usually trends parallel with the creek valley and simply marks an earlier channel of the creek when the gold was laid down in its bed. It is not necessarily

Office Buildings, Solomon River Ditch Co.

continuous but often occurs in detached pockets which are sometimes very rich.

The gravels occurring with these placers vary in size from medium to fine, and are usually poorly assorted with indistinct stratification. On Anvil and Glacier Creeks, the pebbles are chiefly limestone and mica-schist with much scheelite and quartz of vein origin. All these are frequently found to be highly mineralized.

In washing the gravels of the gulches and the creeks much "ruby sand" and "black sand" is obtained. The former is chiefly garnet and the latter magnite. These minerals, having a high specific gravity, are concentrated with the gold in the pay streaks.

In the large streams gold occurs on the bars, also, in profitable quantities and in many cases enormously rich deposits of great extent have been found. Here it is much finer than on the creeks and gulches, but not so reduced as that on the beach. It is variously mingled with the gravels and the sand constituting the bars; and, like them, was deposited by the rivers and streams which brought the material from the creeks and gulches. It was on the bars of Snake River that Nome gold was first discovered.

The statement, made by some of the miners, that the gold becomes finer toward the tundra and coarser toward the ocean, was not borne out by observation.

It is well known that the various forms of gold placers are secondary deposits. The ultimate source of the gold is to be sought for in the bed rock, where it is usually found in veins. In a new region, like that of

Nome, the prospector naturally turns first to the deposits which will yield immediate profits. Therefore vein or quartz mining, as it is often called, receives but little attention. In the Arctic region, moreover, prospecting for mineral veins is much impeded by the thick coating of moss which covers most of the surface of the country. We have, therefore, but little definite information in regard to mineral veins of the region.

As far as it goes, this evidence points to a derivation of the gold from the mineralized veins and country rock above described. I wish to emphasize this because of the prevalent idea that the placer gold has been brought from great distances by the action of ice, or through some convulsion of Nature. This is a complete misconception, for there is no evidence of glacial action, and all the facts point to a local source of the gold. As placer gold can only move downhill from the parent rock, it is evident that the source of the gold in the creeks and gulches must be sought within their drainage basins. I do not wish to imply, however, that mineralized veins of commercial value must necessarily be found in the vicinity of the rich placers. Such has not been proved the case in many other placer regions. The gold of the parent rock may not be in a sufficiently concentrated form, or the cost of mining, because of local conditions, may be too great for profitable exploitation.

A very important consideration, moreover, in regard to the richness of placers, is that they have often derived their gold from immense masses of rock. The agents of erosion are constantly attacking the bed rock

Construction crew on line of the Solomon River Ditch Co's. Big Ditch. Solomon River, Alaska. July 27th 04.

of any given area, reducing it to gravel, sand and mud, which streams carry seaward and re-deposit in various forms. A heavy substance like gold, which may have been disseminated through the rock, is concentrated during this process by the sorting action of water and thus placers are formed. The richness of a placer may quite as likely point to a previous erosion of great masses of bed rock as to rich and individual veins. I repeat, therefore, that rich placers cannot be considered conclusive evidence of the presence of rich gold veins in the region.

In the foregoing the gold has been traced back to its source in the bed rock. The placers of the gulches, which lie adjacent to this source, have been shown to contain the coarsest gold and to include the richest deposits. The gold in the tundra, having been transported a greater distance than that of the gulches, is of a finer grain; while that of the beach, which has been subjected to the wearing action of waves, is still finer. The life history of a gold nugget in this region is somewhat as follows:

When the nugget is freed from the parent rock, by the disintegrating agencies, it has an angular form. It is washed down to the gulches and gradually becomes subrounded. By some accident of erosion the gulch placer may be disturbed; and the nugget, again moved and still further reduced in size, finds its way to the tundra deposits. By the shifting of the shore line it may subsequently be exposed to wave action, ground down still smaller, and eventually become flake or flour gold.

I expand this elementary idea as to the origin of gold deposits, because of a misconception among some of the miners in the Nome region that the sea has washed up the gold and deposited it on the beach. It is even asserted that the waves are constantly adding gold to the beach placers by bringing it up from the depths of the ocean.

The practical criteria suggested for locating these old buried shore-line and old stream-channel pay streaks, without actual prospecting, are those of topography.

In the location of the old stream-channel pay streaks one should look for portions of old, dry, shallow valleys, or draws; the general alignment, or trend, of depressions and ponds in the surface of the tundra, represents the course of former waterways and stream channels.

On the creeks and in the gulches the process of mining consists of stripping, damming, ground sluicing and box sluicing. In some cases rockers are also used. The gold found here is, generally, coarse; so that its separation from the associated black and ruby sand, found with it in the sluice box, is not a difficult task. Further separation is accomplished by first panning, then blowing; and, finally, the employment of a hand magnet in the case of the magnetic black sand.

BREAKING GROUND ALONG THE LINE SOLOMON RIVER DITCH

CHAPTER XI.

FLORA AND FAUNA.

THE striking feature of the Nome region, with respect to vegetation, is the absence of timber. The tundra has been referred to as a flat, treeless, moss-covered waste. In this it differs little from the barren lands of the Arctic coast. Not a tree is to be seen and in most places not a bush or shrub of any sort. The nearest approach to anything like timber in the region is a dwarfed or stunted growth of alder and willow. This shrubbery, or brushwood, rarely attains more than three or four feet in height and seldom three inches in diameter. It appears principally along the edges of some of the valleys and on the creeks and gulches in the lower reaches of the mountains; it is sometimes found crouched in fringes closely hugging the stream beds in the tundra. It is unsuitable for camping and wholly inadequate for cabin-building and mining purposes. This absence of timber is assigned by Professor F. V. Colville, United States Botanist, who has visited the region, to the rigors of the Arctic climate.

The Port Clarence region is similarly destitute, while the absence of timber in the St. Michael region is well known. Some timber, however, occurs in the Golovin Bay region, as may be seen from the following account of Captain Jarvis concerning his Overland Relief Expedition to Point Barrow in 1897 and 1898:

"The timber here, which is presumably spruce with some poplar, cottonwood, alder and willow, probably owes its existence and preservation to the more sheltered condition of the region. On the southern edge of Golovin Bay is a good heavy growth of timber, but the west side is bare. In a few valleys of Golovin Sound was a sparse growth of trees, but, except for a few visible in the distance in the Kotzebue Sound region, we saw no more trees in all the country we travelled through from here to Point Barrow."

Though the Nome region grows no timber there is another source of fuel supply on this bleak coast. It consists of drift wood, or timber, cast ashore by the sea. Here it has been left in a great windrow, extending almost continuously along the beach near the base of the tundra, while in the estuaries, embayments and tidal lagoons the accumulation is often very great, covering many acres in area. This driftwood consists principally of trunks and stumps of trees, forming logs often from twenty to forty feet in length and two or more feet in diameter, many of which are still in a fair state of preservation. The timber is principally Alaska spruce, though other varieties are reported. It has come from the Yukon River and distant shores. Some logs bearing the brand of Puget Sound sawmills are reported to have been found. The value of this driftwood to Nome and the prospector, both as fuel and in the construction of winter cabins, can hardly be overestimated. At points away from Nome its use to the prospector will probably continue for some time to come.

ANVIL ROCK, FROM WHICH THE FAMOUS CREEK AND MOUNTAIN ARE NAMED.

"A LONELY LAND."

For so great a population as that of Nome, however, the supply is necessarily limited, and little or no reliance should be placed upon it for future use.

In the Nome region, both on the tundra and in the larger valleys, occurs a patchy but fair growth of grass, suitable for the support of horses, cattle and sheep during the summer months. In certain localities the reindeer are reported to feed upon it in the green state. It does not, however, so far as observed, seem to be suitable for hay. Wild flowers abound in great profusion and some herbs, presumably of the Arctic flora type, are reported to occur.

The principal wild fruits occurring in the region are the blueberry and the salmonberry. The latter is quite common. In some localities on the peninsula it is preserved by the missionaries and natives for winter use.

The principal and most universal vegetation in the Nome region is moss. It is of the true Siberian, or Arctic, tundra type of the Eastern Continent. It covers with a dense growth the entire Nome tundra, and in many localities extends into the mountains. According to Dr. Sheldon Jackson, of the Bureau of Education, the moss covering the tundra flats about Nome, is of two kinds. The larger portion of it is the Sphagnum. Mixed with this is the "reindeer moss" proper, the scientific name of which is cladonia rangiferina. On this latter moss the reindeer thrive at all seasons of the year.

Vegetation attains its maximum growth in late July and early August. Then verdure and wild flowers

abound, giving a great variety of colors; but they do not flourish long. Scarcely has the season emerged from spring and the snow disappeared, when it passes into autumn, with its blighting frosts, indicative of the approaching winter. These summer days are long. From late May to early July it is daylight nearly all the time, with night scarcely perceptible at the time of summer solstice; in August the length of the day begins rapidly to decrease.

The winters will probably average ten or more degrees milder than at the Fortymile and Klondike region at the same latitude in the interior. They are not much colder than in some parts of the United States. The minimum temperature seems to occur about the middle of January, at which time the thermometer rarely descends to more than 30° below zero. From late October to early April, however, for a period of nearly six months, there are said to be but few days on which the thermometer rises above the freezing point. Snow begins to fall on the mountains about the middle of September. Blizzards are frequent. They begin in November and are usually of several days duration, although some have been known to last for weeks in the month of February. They usually come from the north or northeast. The snow-fall is not heavy, but the snow drifts greatly. It comes with the prevailing winter winds, which are usually from the north and northeast, especially the latter. A west wind denotes clear weather, during which the display of northern lights is said to be sublime. The fallen snow is peculiarly dry-frozen, so that pieces of it when struck

REINDEER HERD, POINT BARROW, ALASKA.

TRAVELING WITH REINDEER.
(Missionary and Laplander.)

together give a clinking, metallic sound. The ice attains a thickness of from four to five feet, but Behring Strait, the channel between Seward Peninsula and Siberia, is rarely, if ever, frozen over by a continuous sheet of ice. Only rarely can the Diomede Islands, in the middle of the channel, be reached on the ice. According to Captain Jarvis, solid ice usually extends beyond the shore from five to six miles; outside this is open water with fields of ice drifted about by the wind. Even in the coldest weather the natives go out to this open water to hunt seal. Nearly every year some of them are carried away, and almost perish from starvation before the ice field drifts near enough land to enable them to leave it and reach the shore. In the spring, water begins to flow in the creeks and rivers toward the latter part of May, about the same time the ice breaks up in the Yukon country. The Nome coast is free from ice earlier in the spring and later in the fall than the coast about St. Michael's Harbor; but usually the fields of drift and shore ice do not sufficiently disappear to permit the approach of vessels before the 10th of June. As it begins to form again about five months later, vessels should not count on leaving the region later than early November. When played upon by the wind and tide, the drift ice is said to often pile up to a height of one hundred feet or more along the shore.

The climate, though for the most part moist and rainy, may be said to be generally healthful in summer. It is exceedingly rigorous when cold weather sets in, making common severe colds and pulmonary troubles, especially pneumonia. Drainage and water supply in

Nome City in 1900 were poor; thus typhoid fever, often complicated by pneumonia, was frequent and not rarely fatal.

In the Nome region, and on the greater part of Seward Peninsula, large game of almost every kind is rather scarce. The principal indigenous land quadruped is the Arctic hare. Lynx are also said to occur. Only occasionally is a caribou or bear to be seen. Of the feathered tribe, the ptarmigan, grouse and Arctic fowl are all indigenous and common, while during the short summer season many species of temperate-climate birds visit the region.

Vast quantities of water fowl rise from the streams and lakes in some localities. A majority of the rivers are so filled with fish, that the means used for luring the finny denizens of the deep from their native element in almost all civilized countries are discarded, and a more simple, unsportsmanlike, but effective bucket, shovel and club, supply the place of rod and line.

The salmon and trout are undoubtedly among the finest in the world. Some idea of the quantities of them running up the rivers may be gained from my experience in crossing the Solomon River on horseback, when the animal that I was riding became so frightened by the salmon darting around his legs as to be nearly unmanageable.

A never ending school of these magnificent fish seemed to be constantly going up or down this stream during the open season.

"Quail Creek" is said to be so named on account of the ptarmigan, or willow partridge, being so numer-

A TEAM OF REINDEER.

ous as to be easily dispatched with a stick. The early discoverers, while "long" in mining experience, were so "short" on orthography as to be unable to spell ptarmigan, and said, "Oh, let's call it quail," and quail it is—although it is absolutely certain that no quail has ever been seen in the vicinity of the stream. On account of the birds' exceeding stupidity the Eskimos in their language call them "fool-birds."

This ptarmigan is found in greater numbers than any other Arctic bird south of Behring Straits. His coat of white in winter affords him protection by making him invisible at a short distance among the snow and ice, although the birds are brown in summer.

The reindeer are not numerous, despite the well directed and determined efforts of the Government to protect and propagate this valuable animal. It may be truly said that every part of the reindeer is put to some use. The flesh is darker and coarser than the ordinary vension, but very sweet and wholesome. The tongue and marrow are great delicacies; the blood, of which not a single drop is allowed to escape, is either drunk warm or made up in a kind of black pudding. The skin furnishes not only clothing impervious to the cold, but tents and bedding as well. Spoons, knife-handles and other household utensils are made from the bones and horns. The latter, with the hoofs, serves for making an excellent glue. The native boots, or mukluks, are made like a moccasin shaped boot, tightly and carefully sewn, so as to be perfectly waterproof and the soles are made soft and pliable. The women chew the leather until it attains the desired condition.

The fur-bearing animals, such as the Arctic fox, polar bear, martin, sable and wolverine, are not numerous enough to make the fur trade—so important in the interior and on the northwestern side of Behring Straits—of any considerable consequence.

Fishing is carried on, in a small way, by natives along the greater part of the coast; but more especially on the larger streams. The principal fish is the salmon. Here, as elsewhere in Alaska, this and the cod are the fish upon which the native largely relies for his supply of winter food. Salmon-trout are also common, and fine rock-cod occur as far north as Cape Prince of Wales. Along the Nome coast a species of herring or smelt, very plentiful and of a fine flavor occurs. A species of large crab, much like the Pacific coast crab, delicious and much used as food, is found at Golovin Bay and as far north as Cape Prince of Wales.

The hair-seal is common all along the coast and becomes abundant towards Cape Prince of Wales. It is an important animal to the native, on account of its store of meat and oil and, especially, the skin for clothing, footwear and sundry uses. The seal are taken in both summer and winter. As I before stated, the natives go out on the ice six or eight miles from shore where a few seal can be procured at the edge of the open sea.

Few Arctic animals are more valuable to man or more frequently mentioned in Polar voyages, than the walrus or morse (*Trichechus rosmarus*), which, though allied to the seal, differs greatly from them in the development of the canines of the upper jaw, which form

PROBABLY THE ONLY PHOTOGRAPH OF A HERD OF WALRUS. TAKEN BY MR. E. H. BROWN, NEAR BEHRING STRAITS. THE WEIGHT OF A FULL GROWN WALRUS IS ABOUT 2,000 POUNDS.

two enormous tusks projecting downward to the length of two feet. The morse is one of the largest quadrupeds existing, as it attains a length of twenty feet, and a weight of from fifteen hundred to two thousand pounds. In uncouthness of form it surpasses even the ungainly hippopotamus. It has a small head with a remarkably thick upper lip, covered with large whiskers or bristles; the neck is thick and short; the naked gray or red-brown skin hangs loosely on the ponderous and elongated trunk; and the short feet terminate in broad fin-like paddles, resembling large ill-fashioned flaps of leather. Its movements on land are extremely slow and awkward, like those of a huge caterpillar, but in the water it has all the activity of the seal, or even surpasses them in speed.

Gregarious, like the seal and many of the dolphins, the walrus love to lie on the ice or on the sand-banks, closely huddled together. On the spot where a walrus lands, others are sure to follow; and when the first comers block the shore, those which arrive later, instead of landing on a free spot farther on, prefer giving their friends who are in the way a gentle push with their tusks so as to induce them to make room.

Timorous and almost helpless on land, where, in spite of its formidable tusks, it falls an easy prey to the attacks of man, the walrus evinces a greater degree of courage in the water, where it is able to make better use of the strength and weapons bestowed upon it by nature. Many instances are known where walrus, which never attack but when provoked, have turned

upon their assailants, or have even assembled from a distance to assist a wounded comrade.

The walrus is confined to the coasts of the Arctic regions, unless when drifted ice or some other accident carries it away into the open sea. Its chief resorts are Spitzbergen, Nova Zembla, North Greenland, the shores of Hudson's and Baffin's Bays; and on the opposite side of the Polar Ocean, the coasts of Behring Sea, and to the north of Behring Straits, the American and Asiatic shores from Point Barrow to Cape North. It has nowhere been found on the coasts of Siberia from the mouth of the Jenisei to the last-mentioned promontory, and on those of America from Point Barrow to Lancaster Sound; so that it inhabits two distinct regions, separated from each other by vast extents of coast. Its food seems to consist principally of marine plants and shell-fish.

The dog is indeed the best friend of man in Alaska, as he furnishes by far the most reliable means of transportation. There are three varieties; the Huskies, that come from the neighborhood of the McKenzie River; the Siwash and the Malemut, the latter two varieties being found over almost all that section. They are strong, hardy animals, decendants of the Siberian wolf, which is still numerous enough in the interior to make them a source of great anxiety to the reindeer herders.

When the Alaskan dog breeder discovers that his stock is deteriorating by inbreeding, he visits some wolf infested section with his stud bitches, and leaves them free, for a term, to mingle with the various packs.

DOG TEAM

ON NOME BEACH.

In such case he relies on the instinct which usually brings the wandering dogs home to their master, or he tethers them in the runways frequented by the packs, until the desired result is attained. The hardy animal bred as above described retains many of the characteristics of the pure wolf. He remains very tractable and is nearly always a faithful and willing servant, guard and companion.

In the form of their bodies, their short, pricked ears, thick furry coat and bushy tail, the dogs of the Eskimo so nearly resemble the wolf of these regions that when of a light or brindled color they may easily at a little distance be mistaken for that animal; but an eye accustomed to both, perceives that the wolf always keeps his head down and his tail between his legs in running, whereas the dogs almost always carry their tails handsomely curled over their back. The hair in the winter is from three to four inches long; besides this, nature furnishes them during this rigorous season with a thick under-coating of close, soft wool, which enables them to brave the most inclement weather. They do not bark, but have a long melancholy howl, like that of the wolf. When drawing a sledge they have a simple harness of deer or seal-skin going round the neck by one bight, and another for each of the fore legs, with a single thong leading over the back and attached to the sledge as a trace. Though they appear at first sight to be huddled together without regard to regularity, considerable attention is really paid to their arrangement, particularly in the selection of a dog of peculiar spirit and sagacity, who is allowed by a longer trace to precede the rest as

leader, and to whom, in turning to the right or left, the driver usually addresses himself, using certain words as the carters do with us. To these a good leader attends with admirable precision (especially if his own name be repeated at the same time), looking behind over his shoulder with great earnestness, as if listening to the directions of the driver, who sits low on the fore part of the sledge, whip in hand, with his feet overhanging the snow on one side.

On rough ground, as among hummocks of ice, the sledge would be frequently overturned if the driver did not repeatedly get off, and, by lifting or drawing it to one side, steer it clear of those obstacles. At all times, indeed, except on a smooth and well-made road, he is pretty constantly employed thus with his feet, and this, together with his never-ceasing vociferations and frequent use of the whip, renders the driving of one of these vehicles by no means a pleasant or easy task.

The whip is six yards long, the handle but sixteen inches—a short lever to throw out such a length of seal-hide.

In the summer, when the absence of snow prevents the use of sledges, the dogs are still made useful, on journeys and hunting excursions, by being employed to carry burdens in a kind of saddle-bag laid across their shoulders. A stout dog thus accoutred will accompany his master laden with a weight of twenty or twenty-five pounds.

The scent of the Eskimo dog is excellent, and his sagacity is turned to account in finding the seal-holes, which they will discover entirely by the smell at a very

great distance. The track of a single deer upon the snow will in like manner set them off at full gallop at least a quarter of a mile before they arrive at it. Indeed, the only animal which they are not eager to chase is the wolf, of which they seem to have an instinctive dread, giving notice at night of their approach to the huts by a loud and continued howl.

In spite of their invaluable services, they are treated with great harshness by their masters, who never caress them and, indeed, scarcely take any notice of them except to punish them. Notwithstanding this rough treatment, the attachment of the dogs to their masters is very great.

CHAPTER XII.

IN CONCLUSION.

TO those who contemplate going to Alaska, to battle with the climate, to cross almost impassable country, to ford streams nearly as cold in the summer as they are during the long Arctic winters, I would say, "don't."

I say this with full knowledge that many men succeed in making fortunes in that country, but it requires some capital and unlimited nerve and determination. Gold is there in untold quantities, though it is not for the average man; and when such an one stumbles upon it, as such sometimes do, it is by the merest chance.

The gold seeker in Alaska should be a man of iron nerve and constitution. He should, by all means, possess some practical knowledge of gold mining; should have an objective point, about which he must obtain all the accurate information possible before starting; should be supplied with a perfect outfit for the season in the far north. He should have money to carry out his cherished plans. He will not be able, in the vicinity of any of the great mining camps of Alaska, to locate an inch of ground; and must either purchase claims, or interests in claims, or wander far from the present mining districts, on long and costly prospecting tours to obtain anything of value. The thousands who return from the Nome regions, condemning the country, are like the hundreds

PART OF SOLOMON RIVER DITCH SYSTEM CONSTRUCTED IN 1904 BY D. M. BROGAN AND THE AUTHOR.
ELEVATION AT THIS POINT IS 150 FEET ABOVE THE BED OF THE RIVER.

and thousands who have returned from every gold rush known. Many of the disappointed arrived on the gold fields without a dollar in their pockets or a penny's worth of supplies, with the mad idea that they would be able to wash out gold enough, during their first day on shore, to purchase the much needed dinner. Men returned from California in the early fifties, denouncing the country and all who remained in it. They did the same from the Comstock and Body regions later; and, still later, from Leadville and Cripple Creek. Yet all these regions have yielded millions, and extensive mining operations are still carried on successfully. In Australia and South Africa the story has been the same.

The riches of Alaska have been proved too conclusively to require defense at my hands. The Government records show that more gold has been taken out of the Seward purchase than from any one section on the face of the globe at the same period of development; and it is universally conceded that the authorities have no record of fully one half of the output of that territory. The individual miner observes, in many cases, the most profound secrecy concerning his "find." The successful Alaskan miners have disposed of their gold in Nome, Seattle, Portland, San Francisco, Chicago and other cities scattered throughout the far and middle west, not a few of them bringing gold to the New York market. The establishment of a Government assay office at Nome City would have greatly increased the record of gold in the peninsula.

In Alaska, as in fact everywhere else, everything depends upon the people in charge of operations. Judgment and skill, untiring energy and experience nowhere count for so much as on a gold field. Some of the very best mines in Alaska have been, in the hands of incompetent men, total failures for a long time; and later, under proper conditions, sources of enormous revenue.

It is a mistake to believe that a few seasons will see the end of successful mining operations in Northwestern Alaska. It is the opinion of the best informed experts that the mining industry will still be in its infancy in this region in twenty years. In the mean time well equipped individuals and well organized companies will amass colossal fortunes and the right kind of Alaskan securities will pay enormous dividends.

That the country has a wonderful future no one, who has studied the conditions which make it what it is, doubts. One of the economic features of this section in contrast with other rich placer camps in the Northwest is the ease with which it is possible to arrive. After the voyage, the moment your foot presses terra firma, you may consider yourself in touch with valuable mining ground. There are no mountains to cross, no long rivers with their ever present dangers to ascend.

As everything can be bought on the ground, of men who know your needs, no six months' "mushing in" supplies over wintry trails is necessary. No tolls, duties, or royalties, will be incurred as in the Klondike,

PART OF SOLOMON RIVER DITCH SYSTEM CONSTRUCTED IN 1904 BY D. M. BROGAN AND THE AUTHOR.
FLUME OVER BUTT CREEK.

because the country belongs to Uncle Sam, and you are allowed to suppose (until you get there) that the people have some voice in making the laws which govern them.

"I have panned personally all over the country—actually panned myself—and never once did I obtain a blank. On the other hand I have obtained pans running as high as Nine Dollars and Seventy-Five Cents and as low as One Cent. It is no exaggeration to say there is gold everywhere, and the only thing needful to produce this gold is water." Such is the statement in the *Seattle Post Intelligencer*, October, 1904, of Isaac Copeland, one of the cleverest and best known mining experts in the United States.

Mr Copeland says that gold can be found everywhere, and he does not exaggerate when he so states. That his predictions of the future of Alaska will be verified has been amply demonstrated to every man in Alaska who has the sagacity to observe the conditions surrounding him. Along the coast and in the interior country between Point Barrow and Unalaklik, hundreds of streams carrying gold have been discovered, and when this is said one-half has not been told. Beyond the development of the highly profitable creeks and benches, practically nothing has been done; to use a well worn miner's phrase — "the country has hardly been scratched." In hundreds of places immense gravel beds carrying a small percentage of gold have been uncovered. These are not rich enough to work profitably by the ordinary method of shovel and sluice box, but the attention of capitalists has been attracted to them, and before many seasons have passed, steam shovels,

dredges, hydraulic elevators and other labor saving appliances will be installed, and thousands of acres now lying fallow, will be the scene of great activity.

Soon after Nome ceased to be terra incognita, particularly in 1900, many unsuccessful men returned, to fill the papers with stories of hardships both real and imaginary.

"There is no gold at Nome," they said, and the capitalist dropped his interest in Nome. Fortunately for themselves a few persisted in the conviction that the country was immensely rich. Some of these are now reaping the reward of their determined efforts in this veritable Land of Gold.

ROCKERS ON BEACH AT CAPE NOME.
ONE MAN WILL HANDLE, WITH A ROCKER, ONE TO TWO CUBIC YARDS OF DIRT PER DAY.

APPENDIX.

USUAL METHODS OF MINING IN ALASKA.

SINCE that accidental discovery, by men wholly unversed in mining, in 1899, over Thirty Million Dollars in gold dust have been taken out of a limited area. This has been done by methods so primitive and yet so costly that if it were not for the fact of the great richness of these placer mines, the entire product would have been swallowed up by the cost of operation. During the first two seasons, after the discovery of gold on the Seward Peninsula, great quantities of gold-saving machinery were shipped in and tried, almost invariably with disastrous result.

Leaving out of the question these impractical machines, there remain but three methods of extracting gold, which are acknowledged to be successful. The one-man rocker, simple in construction and costing next to nothing, will yield good results when pay dirt is rich or where water is scarce. Its results are sometimes surprisingly good for a man who has nothing and whose aspirations are not great; but the use of even a large number of rockers would hardly be considered seriously by a company which hoped to receive commensurate returns on a considerable investment.

The second method, and that which has been chiefly in vogue in the region to which reference is made, is that of using sluice boxes. Fortunes have been made by this

method, and under some circumstances it is quite satisfactory.

In the region near Nome, wages paid to the ordinary miners are invariably Five Dollars a day, and the cost of boarding is never less than One Dollar additional per man. A placer miner usually throws into the sluice boxes about five cubic yards of dirt per day. An ordinarily rich placer mine would be likely to employ one hundred men, the cost of which would be Six Hundred Dollars per day, and the result would be the handling of five hundred yards of auriferous earth. Even by these most wasteful and primitive methods, vast amounts of gold have been extracted from the creeks; and at the present time the same primitive methods are being used on many claims.

The use of large dredging machines on the bars of rivers and creeks has recently been begun on the Seward Peninsula. Such machines have been successfully employed in certain mining sections of the United States and in Australia.

Steam shovels have done excellent work on a few isolated claims where somewhat unusual conditions prevail.

During the seasons of 1902 and 1903, especially during the latter, it has dawned upon the miners on the Seward Peninsula that the only economical and proper way to mine is by building ditches. The idea is to divert a portion of the water of a river from its natural course, and, by means of a ditch (or canal), lead the water so diverted around the base of the hills. The natural fall of these streams is usually very rapid, so

SLUICING ON AVINL CREEK. DIRT IS HANDLED BY THIS METHOD AT A COST OF ABOUT ONE DOLLAR PER CUBIC YARD.

HYDRAULIC MINING BY WATER FROM A DITCH. BY THIS METHOD DIRT IS HANDLED FOR A FEW CENTS PER CUBIC YARD.

that by the time the ditch has reached a point a few miles below its intake—assuming that the ditch has a fall of about four feet to the mile—the ditch will be high above the natural bed of the stream. Thousands of acres of placer mines lie between the ditch and the natural river bed. Gates are put in these ditches at any desired point, and the water from the elevation which the ditch has attained gives sufficient force to hydraulic the mines lying between the ditch and the river bed proper. These ditches usually carry several thousand miners' inches* of water; and with less than seven hundred inches of water it is possible to hydraulic and sluice twelve to fourteen hundred cubic yards of dirt per day. This can be accomplished with a force of half a dozen men. It will readily be seen what a tremendous saving is made in wages, and with what an enormous increase in the amount of dirt handled and sluiced.

* A "miner's inch" is the amount of water that will pass, in twenty-four hours, through an opening one inch square, under a pressure of six inches. In bulk it amounts to 17,280 gallons. In Alaska, however, water so measured is sold by twelve instead of twenty-four hours run.

AMERICAN MINING LAWS IN BRIEF.

The general mining laws of the United States, moulded after those of the State of Oregon, are applicable to Alaska. A brief outline of the placer laws are as follows:

No single individual can locate more than one claim, consisting of twenty acres on the same creek, and no association of persons can locate more than one hundred and sixty acres in the same locality, which association, to obtain the maximum quantity, must be composed of no less than eight bona fide locators.

All mining ground outside the limits of an organized district can be organized into a separate district, by the joint presence of six men who have located claims in this new part of the country. They are allowed to elect a recorder, with whom records of claims are filed, to define the limits of the district, manner of making locations, and to fix limits of time for all claims to be recorded; amount of assessment work to be done, also to limit and define all local arrangements, consisting of handling debris, rights of way, and use of water from creeks and ditches, etc.

No local laws or regulations can restrict one from locating twenty acres, if he so desires, but he is not compelled to take that amount.

No local mining association can pass laws in conflict with United States mining laws.

If ground has been previously surveyed, placer claims must conform to legal subdivisions, not to exceed twenty acres for each claim.

A patent for land claimed or located under the United States mining laws, applicable to Alaska, may be obtained after Five Hundred Dollars worth of work has been done for each individual claim, or fraction thereof, by application to proper authorities. The price per acre for placer ground is Two Dollars and Fifty Cents.

If a placer claim contains a vein or lode of quartz running through the same, the locator of the placer claim has no right whatever to the vein or lode, unless special reference is made in the notice, giving the exact locality and general direction of vein, or lode, within the limits of the claim.

In applying for a patent a survey must be made of the lode, and twenty-five feet on either side of the same, and paid for at the rate of Five Dollars per acre.

Failure to comply with any of these requirements, forfeits all rights to quartz veins within the limits of the placer claim.

The mining laws of the United States apply only to the citizens thereof, or those who have declared their intention to become such.

No lode claim can contain more ground than a parallelogram one thousand five hundred by six hundred feet.

No more than one location can be made for each locator on the same vein, except of original discoverer, who is allowed two.

All lode locations, to be legal, must be known to contain some recognized mineral, either in vein, ledge, lode, chute or chimney, with at least one well-defined wall, where a discovery notice must be posted, containing the name of locator, description of the claim, its limits and general direction. The location must be properly bounded by posts, or monuments (with proper inscriptions), at each angle and one at each center end.

The location of a quartz claim must be filed for record in a similar way to that of a placer claim, with some one to act in that capacity. It is also customary to send a certificate of record to the general land commissioner of that district.

The sum of One Hundred Dollars must be expended yearly in assessment work. All locations date from the first day of January next following the date of location.

After gold is found in paying quantities, stake the ground and put up your location notice, which should read as follows:

NOTICE IS HEREBY GIVEN that the undersigned, in compliance with the requirements of the Revised Statutes of the United States, ha... this day located the following described Placer Mining Ground, viz:

COMMENCING AT.....

.....

.....

situate in the.....Mining District.....

.....of.....

This claim shall be known as the.....

Placer Mining Claim.

Located.....day of.....1.....

.....

POWER OF ATTORNEY.

The United States Mining Laws permit the staking of claims, for non-residents, through a Power of Attorney. This law was taken advantage of by the miners in the Nome district, and serious trouble is likely to result. This law should be done away with as soon as possible. Miners who arrive on the ground a little late find that everything is staked for people who never expect to work the ground.

The law which provides for the doing of One Hundred Dollars worth of assessment work on each claim, each year, is an iniquitous one. It gives unprincipled locators opportunity to hold large numbers of claims, on which they pretend that they have done proper assessment work. In many cases such men locate, and then deliberately abandon, claims. When such claims are later restaked and found to be valuable, it is not difficult for the original locator, if he be dishonest, to produce so called witnesses who will swear that the assessment work was properly and annually done.

In Canada a man is compelled to pay a certain sum of money in lieu of the assessment work. It would be infinitely better if some such law were operative in Alaska. In that case money so derived could be used for the building of wagon roads through the country, and there would be no dispute as to whether or not a locator had done the assessment work as provided by law. In cases where a locator would prefer or be better able to do work than pay money, labor to the amount of any payment could be done on the government roads just as taxes may be "worked out" elsewhere.

Even where this assessment work is properly done it is a waste of money and in almost all cases is done simply to cover the requirements, and serves no useful purpose. The rigorous winter rarely leaves any trace of the One Hundred Dollars worth of assessment work when the following spring arrives; and the fact of the work having been done is almost invariably established by testimony alone.

It is to be regretted that President Roosevelt in that part of his message to Congress, relating to Alaska, December 7th, 1904, did not recommend the amendment of the mining laws so as to cover this point. The existence of the mining laws in their present condition, and especially that part of them which relates to the assessment work, is solely responsible for nine-tenths of the litigation over mining claims in Alaska.

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DATE DUE

JUL 1 2 [illegible]
APR 2 1991
MAR 5 1995
JUN 2 6 1995
DEC 0 4 2003
DEC 2 7 2004
OCT 1 7 2003
JAN 0 4 2005

DEMCO 38-297